

The Week

HOME
Inquiry at PNL despite CNA
clearance
NUS launches education policy
Entrepreneurial academics foster
industry links
Scottish minister favours private
funding

NORTH AMERICA
Eleven academics suspended in
closed shop row
Kirkpatrick cancels Smith lecture
after student protest
Minnesota court blocks new draft
regulations
Humanities must attract private
money to qualify for grant

OVERSEAS
Soviet Jewish refugees appeal for
international support
South African student newspapers
face censorship threat
West Germany's first private
university refused bribes
New Zealand makes university
administrators civil servants

ARTICLES
Felicity Jones talks to the new
secretary of the polytechnic
directors' committee; and John
O'Leary visits a successful
private college, 8
Jennifer Tann reassesses the
achievement of Joseph Priestley
on the 250th anniversary of his
birth, 9
Richard Pearson looks at
projections of future graduate
output, 10
Managing the crisis: In the first of a
two-part series Geoffrey
Lockwood discusses the capacity
of universities to change, 11
Patricia Santinelli visits Exeter's
school of education; and Lionel
Cohen describes the mood of
Dutch students, 12

BOOKS
Lynne Johnson, 13
Kudof Peierls discusses quantum
physics and Barry Cox reviews a
study of the myths of human
evolution (14), and Brian Morris
reviews two books on
Elizabethan theatre (15)

HISTORY BOOKS
Racial myths, Le Roy Ladurie, the
new history, De Valera, the
origins of France, and academics
in nineteenth century Oxford
are among the subjects of new
history books

MANAGEMENT
University business schools,
supervisory training, industry's
view, and lessons from America
are among the subjects of a
special seven-page report on
management education

NOTICEBOARD
29

CLASSIFIED INDEX
30

OPINION
Bernard Crick discusses Sir Harold
Wilson, Philip Thody offers an
alternative 55+ examination,
and Don's Diary from John
Murrell of the University of
Sussex, 38
Letters on the UGC "Times", G. R.
Elton, and writing science books
and "Union View" from Jane
Taylor of the NUS, 39

Next Week

Going private: Buckingham
Alan Ryan on W. G. Runciman
Managing change in universities
Michio Morishima on Sir John
Hicks
Scotland's central institutions



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The Oxbridge backlash

The public interest that is being taken in Oxford's proposal to liberalize its policy on admissions by abolishing the seventh term entrance examination, and Cambridge's decision to abolish entrance scholarships and exhibitions provokes two, perhaps rather bitter, reflections. The first is that at a time of great turmoil within higher education large questions that affect the intellectual vigour of universities, polytechnics and colleges, the economy's need for sophisticated knowledge and highly skilled manpower, and the opportunities that should be available to thousands of young people and adults receive almost no public attention. Yet these Oxbridge issues which even those engaged in them accept are peripheral questions, seem to be the subject of consuming public interest.

Some will say that there is nothing much that can be done about this ludicrous imbalance, and that it is not very important anyway. Others will point out, accurately, that public interest in any case an abstraction that is managed by the powerful few who have rather out-of-date ideas about higher education, and affirm, hopefully, that there is in fact sustained grass-roots interest in the reality of important issues. Yet this imbalance is important for two reasons. First, it means there is little public debate of important higher education issues outside the overlapping circles of experts; at certain times and on certain issues the influence of public opinion is badly missed. Second, the public is offered a stuffy and even bizarre image of higher education that is certainly out-of-date but may also be persuasive in building negative attitudes to universities and other institutions.

The second reflection is that the cause of Oxford and Cambridge is damaged by shrill defenders who use a language that reinforces a hopelessly anachronistic *Brideshead* Revised image of the two universities. What is being proposed is modest and pragmatic. At Oxford the purpose is to modify an admissions system that is biased in favour of those educated

in private schools and encourages a super-selectivity based on unreliable indicators of future success. At Cambridge the proposal is even more modest. Scholarships and exhibitions have long since ceased to perform any useful function within the university (although uses could be found for them at postgraduate level); they have degenerated into a horse race between a few secondary schools, of doubtful educational benefit even to these schools.

Yet both proposals have been irresponsibly exaggerated by the self-appointed "defenders" of traditional Oxbridge values. They have been stigmatized as an attack on excellence and as a philistine attempt to level standards. Neither charge can be taken seriously. Even if academic excellence is to be regarded as the sole criterion for admitting undergraduates - a belief about which the liberal university tradition most prominently represented by Oxford and Cambridge is clearly ambivalent - there is a strong case for arguing that the Oxford reform would actually help the colleges to select out the best and the brightest.

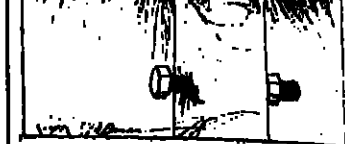
At present, Oxford, and a lesser extent Cambridge, draw too many of their undergraduates from A-level hothouses which rather than elevating Oxbridge entry into an art have debased it into a specialized technique. Yet A levels are acknowledged to be poor predictors of degree success, especially at the level of exactitude required to determine Oxbridge entry. Who can really claim that it is fair to distinguish between two As and a B and an A and two Bs? The reforms that are being proposed at Oxford would make it possible for more sophisticated and legitimate measures of "excellence" to be developed. They would allow the colleges to make up their own minds rather than having their made up for them by an over-heated A level/seventh-term entrance examination machine.

There are other reasons for welcoming these reforms, almost as persuasive. If Oxbridge entry is at all responsible for turning schools into A-level hothouses it is gravely distorting the proper balance of these schools. However much they may resist the abolition of the seventh-term examination or of scholarships and exhibitions, their abolition would in fact take a lot of undesirable pressure off these schools to the benefit of the majority of their pupils. Nor is it to the advantage of the university to have too many students whose precocious intellects have already been developed to their limit. That is neither a recipe for academic excellence nor for a balanced student community.

In any case much of the public debate is based on hopelessly out-of-date information. Most students are admitted to Oxford on A levels and a fourth-term entrance examination; the third-year sixth formers are now a minority. Most come from state schools. Colleges try not to place too much emphasis on A level point scores but give weight to broader factors. So much of what is being proposed is already half-done. On scholarships, of course, the Robbins committee had the last unchallengeable word 20 years ago.

Some of the anger of the "defenders" of traditional Oxbridge values may be explained by two rather broader factors. First, Oxford and Cambridge have come to terms, on the whole willingly, with the fact they are part of a public system of higher education, although of course they are both eager to defend their privileged place within it in association with other research-minded universities. To the disgust of some, they have rejected the social marginality - masquerading as "excellence" - that has overcome the public schools. Second, they have become more suspicious of amateur "excellence" in common with all universities. This stronger commitment to intellectual and professional competence is reflected in their eagerness to defend their own claims to represent "excellence".

Outraged nostalgia and threatened self-interest make a venomous combination as the pragmatic reformers of Oxbridge have found. Well sir, if you check below you will see that I have invoked the "big shift allowance" clause: the additional shift allowance of £4.



Piece rate payment proposed for university teaching. *THE TIMES*, March 18. Ah, Dr Kundel. Do come in. Another term over, eh?

Yes indeed, sir. Going anywhere at all for Easter? Oh, nothing special, sir. Perhaps a couple of days looking at some of the new National Trust places.

Excellent. Now I just wanted to have a word with you about the invoice you've submitted for last term's teaching.

Sir?

No real problems here as far as I can see, although I do notice that you are claiming £9 an hour for the *British Empiricism: Locke, Berkeley, Hume* course.

Ten seminars at £9 per hour. But surely *British Empiricism* is a grade three course rated at the best £7.50 an hour. You're not confusing it with *The Vienna Circle and Logical Positivism* are you? I recall that being moved up to grade four last term as a result of national arbitration procedures.

No sir. The extra £1.50 an hour is a special allowance.

Special allowance for *British Empiricism*? I think not, Kundel.

No sir. Not for that reason. For "antisocial hours". It's timetable at 10.15 on Friday mornings.

Ah yes. "Antisocial hours", silly of me. So that's more or less straight forward then. And I see you've also claimed the £10 "dirty money" allowance for the *Basic Concepts in Heidegger* course.

Yes indeed. But there does seem to be one little oddity on your Wednesday morning sheet. I refer to the job of Professor Grimthorpe on *The Kantian A Priori*. Now as a joint course surely this comes out at just the £8 an hour, whereas you appear to have submitted a figure of £10.

Well sir, the fact is that Professor Grimthorpe has been a virtual passenger on the course. I was required to take the seminar at my own, and had sole responsibility for making routine philosophical pronouncements during its actual progress.

Good. There doesn't seem to be too much of a problem there. Just one last thing then, Kundel.

What's that, sir?

Rather bad news I am afraid, sir.

Sir?

As you know we've been checking through recent examination scripts in order to establish the exact unit cost of each idea as measured by the unit of time on teaching. And quite frankly I have to tell you that your course is *Contemporary Advances in Ex-*

perimental Thought, has been declared an "unprofitable" venture. It will have to close as from next term. I am sure you understand. But at £3.35 an idea the whole enterprise has become unviable.

Yes sir.

Well that's all for now. Enjoy the break. Oh, and Kundel.

Yes sir?

Don't forget to clock off on the way out will you? Old habits die hard.

Thank you, sir.

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Alan Ryan on
W. G. Runciman, 15

Arie Zuckerman on
hepatitis research, 11

Briefing on Scottish
central institutions, 9

Michio Morishima on
Sir John Hicks, 12

Parkes resists changes in UGC structure

by John O'Leary

Moves to bring universities and public sector institutions under the same planning bodies were ruled out this week by Sir Edward Parkes, chairman of the University Grants Committee.

In evidence to the Commons Select Committee on Education, Science and the Arts, both Sir Edward and Mr Christopher Ball, representing the National Advisory Body, stressed the degree of cooperation which has taken place between their two organizations in the last year. But Sir Edward resisted suggestions for changes in the structure or methods of the UGC.

Mr Ball agreed that there were important differences in the composition of NAB and the UGC. He added: "My view is that we have achieved more in cooperation in little more than a year than would have been believed possible by many of us a year ago."

He was also prepared to consider mergers in England on the lines of the one being carried out in Northern Ireland between the New University of Ulster and Ulster Polytechnic. As long as responsibility for validation, research support, any local authority role and the choice of national body was settled, he saw no problem about future mergers where they were considered appropriate.

Questioned on the planning exercise being carried out by NAB for 1984-85, Mr Ball said that he could not rule out immediate closures of institutions, although he could not envisage a decision which would prevent existing students from completing their courses.

A memorandum submitted by the Department of Education and Science repeated Sir Keith's desire "to see whether a loan ingredient of student support can be designed" and also claimed that demand for higher education had been met despite the Government's cuts. It advised institutions to continue on this course as far as possible within fiscal and other policy constraints.

Convincing win for Stewart

Mr Neil Stewart was this week re-elected president of the National Union of Students in a convincing, outright victory.

Mr Stewart, who last year led the National Organization of Labour Students in a victory in the executive election, beat his nearest rival, the Social Democratic candidate Ms Jackie Sadek, by 425 votes to 106. His majority was so large that only one ballot was needed.

Mr Martin Kelleff (Socialist Workers) polled 81 votes and Mr Paul Goodman (Conservative) 71.

Labour also held on to the job of treasurer. Mr Phil Woolas polled 374 votes to his Conservative opponent's 122.

In his presidential address Mr Stewart accused the Government of following the policies of defeat and despair in its educational policy.

"Defeat" because they manifestly have no policy on education after 16 except a financial one and that is cut; despair because the hopes and opportunities which education should provide are being denied to those in need.

"Proposals to replace grants with loans hang over us like a black thunder cloud distracting us from our real work of arguing for education."

Labour's plan

An emergency programme of action within the first few days of a new Labour Government would include a new "crash programme of training" and immediate increased funding on education, including essential books and equipment.

Labour's Plan: The New Hope For Britain, 95p from the Labour Party, 160 Watworth Road, London SE17 1JT.

The MSC proposes leading and co-ordinating not only training but also related adult and continuing education, mobilizing all potential providers, advising on and sponsoring provision, supplying information, encouraging new technology in learning systems; "providing leadership, stimulus; encouragement and persuasion to act as a catalyst to secure necessary changes at national and local levels."

The strategy is the last of the three objectives announced by the MSC to reform the training system in 1981.

Concerned purely with the training of adults - the other two dealt with young people and apprenticeship - it has undergone numerous drafts before being approved by the commission last week as a consultative document for publication after Easter.

The inclusion of the education system in its sphere of influence appears strongest in the final draft. "Education" had been added to "training" in various sentences, such as "developing a coherent approach to education and training for adults."

Organizations listed as possible links into "the continuing education and training systems" include the Open Teth, the Open University,



Diana Warwick, new general secretary of the Association of University Teachers, on her first day at work. Her first task was to press the lecturers' pay claim at talks held at the University Grants Committee office in Park Crescent, London.

Polish rights abuse chronicled

Military rule in Poland has meant the systematic erosion of universities' rights and academic freedom and the imposition of political conformity on the teaching profession, according to a 600-page report on human and civil rights under martial law commissioned by the underground leadership of Solidarity.

The document, which was delivered to the heads of national delegations at the Helsinki Review Conference in Madrid recently was released in London this week. It contains more than 400 pages of eyewitness accounts and personal statements chronicling abuses of human and civil rights since December 13, 1981, together with a detailed analysis of the legal background to and social consequences of these events.

The major abuses chronicled - in the treatment of students and academics, the disbanding of the independent

students association (NZS), punitive closure of universities and individual departments, replacing democratically elected rectors, and the notorious Decree 189, which makes it mandatory for universities to expel students convicted of taking part in protest marches - have become familiar during the last 15 months.

Far more sinister are the remarks the report quotes from party directives and individual officials, in charge of carrying out the "verification" (political purge) of the universities. These make it clear that in spite of the lip service still paid to the "diversity of world outlook" in the universities, the party and state apparatus view "political conformity" as the primary aim of their educational policy.

MSC attempts to extend its sphere of influence

by Karen Gold

The adult training strategy soon to be published by the Manpower Services Commission will affirm and increase the agency's controversial presence in higher, further and adult education.

The MSC proposes leading and co-ordinating not only training but also related adult and continuing education, mobilizing all potential providers, advising on and sponsoring provision, supplying information, encouraging new technology in learning systems; "providing leadership, stimulus; encouragement and persuasion to act as a catalyst to secure necessary changes at national and local levels."

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Lecturers' pay talks get nowhere

by David Jobbins

It is increasingly likely that the university lecturers' lead over polytechnic and college staff in the salary stakes will be further eroded.

The local authorities have set a ceiling of 5 per cent in their negotiations with college lecturers but this will still narrow the gap if vice chancellors are unable to pay their staff more than the Government-imposed 3.5 per cent limit.

However, despite their potential lead over the universities, college lecturers' representatives failed to make any progress at renewed talks by the Burnham FE committee which sets their pay for the local authorities. The lecturers are claiming 12 per cent plus £268 and want structural improvements, particularly removal of the promotion blockage at the top of the Lecturer I scale.

At no time during largely informal talks did the employers make an offer and the two sides are due to meet again on April 21. An attempt by the Association of Polytechnic Teachers to introduce its own claim seeking parity between the public sector and the universities failed to win the support even of the employers or the other union negotiators.

No offer was made to university lecturers when Committee A, the first stage of their negotiating machinery met for the first time on Monday. Further talks are being arranged but the indications are that serious negotiations may not begin until teachers and civil servants have settled.

In Scotland the tertiary negotiating body set up only 18 months ago, seems on the verge of collapse following another failure to resolve this year's pay talks, writes Olga Wojtas.

The Scottish Joint Negotiating Committee was set up to bring together further education colleges, central institutions and colleges of education. But talks have been hampered by splits within the management, with further education prepared to make a more generous settlement than the two centrally funded sectors.

This week's further education lecturers' were offered 4.5 per cent while the central institutions and college of education management said they could offer only 3.5 per cent in line with the Government guidelines.

MSC attempts to extend its sphere of influence

controversial suggestions in earlier drafts - now deleted - that people wanting training might pay their way through loans and vouchers and employers might pay a training tax based on the rating system.

A compromise on funding appears to have been reached: the paper suggests that everyone should make some contributions but says the question can be left until after the consultation process.

Few changes will occur until 1984-85, the paper says. Money from within the MSC would be likely to be a redistribution of its current £280m spending on adults, with the Training Opportunities (TOFS) scheme for unemployed people - which has had little success in finding them jobs - a major casualty.

News in brief

A site for sore eyes

Aberdeen University is to set up an ophthalmology department with £80,000 raised through its development trust. The trust now has £1,440,000 of its £5m target, intended to enable the university to make innovations despite its 25 per cent cuts.

The ophthalmology unit, to be established in cooperation with Grampian Health Board, has also been financed by £500,000 from the Fraser Foundation, £200,000 from the Aberdeen eye surgeon, Mr Charles Cockburn, and £70,000 from a trust chaired by Sir Steven Miller, an Aberdeen graduate who was formerly surgeon oculist to the Queen.

The unit will include a professor, senior lecturer, lecturer, technician and secretary, and will research the causes of blindness and severely impaired vision. The development trust hopes to set up four other projects: a third chair in engineering; a centre for northern Scottish studies; a unit to monitor economic and social changes in the north of Scotland; and an expansion of the university's anthropological museum.

Rent rise cut

Stirling University has agreed to cut a proposed rent increase after a four-day student occupation of the main administration block. The protest followed a university court proposal that the increase should not be more than 5.06 per cent. The students wanted an increase of only 4 per cent, in line with the student grant increase.

The university has now agreed to reduce the rent increase to 4.43 per cent, at a cost of more than £4,000 which will be met by cuts in various services.

Loans opposed

The Scottish Liberal party has opposed any plans to replace student grants with loans. The annual conference in Aberdeen passed a motion from the Scottish Liberal students describing loans as a cynical attempt to reduce student numbers and finance for further and higher education.

The conference also called for the abolition of the parental and married persons' contributions to the student grants, the restoration of a grant for repeat years' re-entry, fixed by the Scottish Education Department, and a standard grant for all 16 to 18-year-olds in education and training.

Publishing degree

Oxford Polytechnic has been given approval to run the first degree-level course in publishing as part of its modular course. The course will enable students to examine publishing as a key medium of communication. The course was described by the Council for National Academic Awards as an "adventurous innovation" and will see the first admissions in the autumn when the current diploma in publishing is phased out.

Sound progress

The British Institute of Recorded Sound finally won recognition of 35 years' work today when it became a department of the British Library under the new name of National Sound Archive. The British Library hopes that the new arrangement will further national interest in the work of the institute and give it the benefit of the library's expertise in the preservation and care of archival material.

Weighting brief

The London allowance for higher education lecturers should be negotiated separately from schoolteachers, the Association of Polytechnic Teachers has told the local authority decision. The association says that the current allowance of £20,000 a year is based on higher education lecturers' work, not on school teachers' work. It says that the current allowance is "unfairly high" and that it should be reduced to £15,000 a year for university staff in the same area and £10,000 for technical staff in the same area.

History teachers fear for future

by Paul Flather

At least one in seven history lecturers will have disappeared by September 1984 because of the current Government cuts, according to the findings of a hitherto unpublished survey.

Figures collected by the History at the Universities Defence Group based at Birmingham University, show a projected fall of at least 14 per cent in those teaching history between 1980 and 1984, with certain areas such as African and intellectual history particularly affected.

The survey also confirms a worrying imbalance in the age profile of history teachers, with just one university lecturer currently under the age of 25, and 3.3 per cent of the total surveyed under the age of 30.

Oxford University, which has more than 100 history dons, apparently has no one younger than 30. Almost one in two lecturers are in the 35-45 age range. Another worrying feature is a 78 per cent fall in the number of temporary and part-time posts, a traditional stepping stone for young historians.

Details of the survey were finalised last week at a meeting of the group's steering committee, and are being sent to the University Grants Committee, the British Academy and the Royal Historical Society. A similar survey was carried out last year.

Some universities seem particularly badly hit, but the group decided not to single out any institutions on the grounds that all major courses were continuing.

Dr John Bourne, lecturer in modern history at Birmingham and secretary of the group, said option courses in most universities were suffering, and certain areas such as African, North American, early medieval, and Asian history are being affected disproportionately.

The group was also worried by the shortage of posts for young lecturers, and the great "wedge" in the 35-45 range growing old, comparable to "the block" in the post-Napoleonic French navy, according to Dr Bowyer.

The group also plan a series of regional schools conferences to combat the trend of history being undervalued in the early school curricula and submerged among general humanities.

Dr Bowyer, an admissions tutor, said applications were holding up but he feared history was being given second place to more vocational subjects such as law, accountancy, business studies, and even increasingly as an avenue only for teachers.

The survey covered all university history and economic history courses, and worked from a base of 1,100 history lecturers in September 1980. It projects a loss of 154 posts by 1984, including 30 temporary posts.

Courses involving history have closed at Aston, Bristol, Liverpool, St Andrew's, and London universities. Three more joint courses are set to close at Nottingham University where the economic history and history departments are to merge.



READY TO GO - Dr Richard Hill, chairman of Bristol University council, and an opposing team of students raised £1,800 in 18 seconds in a sponsored race to the top of the university's administrative building. The 61-year-old Dr Hill ran up 88 stairs to the senior common room on the fourth floor for the Wells Cathedral Fund while the students took the lift in aid of the University Alumni Foundation.

ARC approves central plan

The Agricultural Research Council has approved a scheme to improve coordination of work in its many institutes and research units.

Starting next year, the ARC will produce an annual five-year policy document, drawing on a computerised central record of all the research units in the council's laboratories and field stations.

The ARC secretariat will prepare the strategic plan and be reorganised to create a new food division alongside divisions dealing with research on plants and animals. This follows a recommendation last year from the committee of the Advisory Council for Applied Research and Development for a new directorate to meet the research needs of the food industry.

Work on the strategic plan is already under way, and will allow for the fact that the ARC's management of research is under especially close scrutiny this year.

Cuts in the council's share of the science budget proposed by the Advisory Board for the Research Councils will begin to bite in 1983/84 unless the ARC can persuade ABRC members that they will cause unacceptable damage to agricultural research. The ARC's "forward look" submission to the ABRC next month will spell out the research areas most likely to suffer if the cuts go ahead.

Committee considers sacked lecturers' claim

A London University committee is to consider a claim that four bereaved medical physics lecturers made redundant for academic and not financial reasons.

The four lecturers, from Guy's medical physics department, are due to lose their jobs in September when their department closes and their head retires.

The Association of University Teachers is attempting to serve a writ on Dr James Houston, dean of the united medical schools of Guy's and St Thomas' Hospitals, and of

Double money for Open Tech

by Karen Gold

High technology centres for updating managers and supervisors are likely to be set up throughout the country under the second stage of the Government's Open Tech programme, whose funding is to be doubled to £16m from this year.

The extra funding comes because the Open Tech's original budget will be used up by open learning development projects set up by outside bodies - companies and colleges - when the OT unit was set up to promote practical and supervisory training last year.

Now the unit will concentrate on initiating technology and projects where it sees needs in British industry, as well as playing a significant part in the Manpower Services Commission's adult training strategy to be announced shortly.

The Open Tech steering group met this week to consider four major

developments, according to OT director Dr George Tolley. One of those would be high technology centres around the country, specializing in robotics and information technology, where high level technicians and supervisors could get experience of the latest new technology - something colleges cannot provide.

The steering group will also consider sponsoring substantial development of Open Learning technology: interactive television, computer-based training, material to accompany these and facilities to improve access to them.

Parts of Britain with rapidly growing new technology industries such as South Wales and South East England will receive support for developing Open Learning facilities, while the field of management skills, not originally in the OT remit, is now firmly established as one of the steering group's four considerations.

Peer calls for librarians fund

The Government should set aside a special sum to protect the level of spending by university and polytechnic libraries on books, Lord Donaldson told the House of Lords last week.

Initiating a debate on the decline in educational book buying, Lord Donaldson, a Social Democrat, said: "The situation is so bad that an exception must be made and a further sum granted to be spent on books and only on books."

Baroness David, for the Opposition, said the Government had not allowed the student grant to keep pace with inflation, eroding students' ability to buy essential books.

The Earl of Swinton, for the Government, said library services could not be exempt from general attempts to economize. It was up to local authorities and educational institutions to decide how to spend their funds.

Four added to pilot tech schemes

by Patricia Santinelli

Four more local authorities were added at the last moment to a list of 10 to run the Government's pilot scheme of technical education because ministers and the Manpower Services Commission were unhappy at the under-representation of London and the North East.

Originally the MSC steering group was asked to select 10 out of 66 authorities which had put in bids for the scheme, designed to promote technical and vocational education for 14 to 18-year-olds.

Eventually the group selected 12 - in case some dropped out - but this still left the South East, North East and London under-represented, especially as the Inner London Education Authority had refused to put in a bid. As a result Enfield and Wirral, which had got through to the first selection process were added.

The full list, apart from these two, is: Barnsley, Bedfordshire, Birmingham, Bradford, Croydon, Devon, Hereford and Worcester, Hertfordshire (in respect of its Stevenage proposal), Leicestershire, Sandwell, Staffordshire and Wigan.

This means that more Conservative than Labour authorities were chosen, nine and five respectively. In addition county councils did marginally better than metropolitan authorities.

Mr David Young, chairman of the MSC, said that politics had not entered the process, but he declined to say why any of the authorities had been selected, apart from the fact that each met the criteria drawn up by the steering group in January.

The exact educational contents of the schemes have yet to be sorted out and Mr Young could not say at this stage how many further education colleges would be involved, although he emphasized that many of the bids were for a combination of both schools and colleges.

He stressed that a typical initiative would involve both types of institutions, and that technical vocational education would be an option available to young people in the full ability range and not aimed at non-academic youngsters.

A shortened version of the youth training scheme certificate and notes of guidance for managing agents were agreed by an emergency meeting of four members of the Manpower Services Commission professional standards advisory group this week.

Rethink urged

Universities must rethink their contribution to continuing education in the light of government initiatives, other providers, and restricted funding, Mr William Shelton, under-secretary of State for education, told the conference of the Universities Council for Adult and Continuing Education this week.

Universities were as central to the Government's PICKUP scheme (professional industrial and commercial upgrading) as polytechnics and colleges, he said. They should re-evaluate their role as adult educators and make sure they were not duplicating provision elsewhere.

Liverpool principal resigns

by Felicity Jones

The principal of the City of Liverpool College of Higher Education has resigned over what he alleges has been the deliberate destruction of the college by Liverpool City Council and the Secretary of State for Education and Science.

Mr Brian Cane, who has been COLCHE's principal for nine years, told the governing body that in 12 months he had witnessed the destruction of a college with "a success story of some magnitude". The first blow, he said, had been the "grossly unfair" formula for the 1982/83 pool allocation which led the council to demand a 25 per cent cut in the college's budget.

"The authority decided to milk COLCHE to finance other debts such as those from L. M. Marsh College with its high unit costs," he said. Redundancies resulted and in-service teacher training was cut from 3,000 to 500 places.

The threat to the initial teacher training places last summer as a result of Sir Keith Joseph's rationalization was the next knock to the col-

lege. "It was an extraordinary thing to do because our teacher training and BEd's were fully integrated and with all the Secretary of State's talk of high academic standards, it did not make sense," said Mr Cane.

"The later decision to reinstate two-thirds of the places in the polytechnic instead of the college was an obvious ploy to encourage Liverpool City Council to merge us. It nevertheless came as a tremendous shock when the director of education produced, without any prior discussion, a paper saying the merger had to go ahead."

Mr Cane told the governors that he had gradually lost confidence in the merger arrangements as the shadow governing body never materialized. "There was no attempt to set it up and meanwhile all the important decisions were being taken by the existing polytechnic director," Dr Gerald Bulmer, and the city council," he told them.

The final straw for him came last week when a council working party, which had been formulating the National Advisory Body response, decided to recommend that the BA

and BSc courses should be scrapped and what remained should be incorporated into three or four degree courses as at the polytechnic.

"It meant the complete dismantling of the college which I was not prepared to accept. There did not seem to be any future in the polytechnic which is in a muddle and I did not want to be part of an organization which was set on a course of self-destruction."

Events at Liverpool Polytechnic took a new twist this week when a motion of censure against the rectorate was tabled for a meeting of the academic board.

The motion of no confidence in the "management and academic leadership of the polytechnic" was proposed by Dr V. Lancaster-Thomas, head of the department of sport and recreation studies. The department's sports science course is under threat of closure along with the department of town and country planning.

The reason given for the no confidence motion was the deteriorating standing of the polytechnic in the eyes of the Council for National Academic Awards.

Bedford's des. res. for sale

by Ngaiio Creqeur

Bedford College, London, is about to put its spectacular main site in Regent's Park, London up for sale worldwide.

The London University college hopes that the sale of the site will provide the bulk of the £16m cost of merging with Royal Holloway College, London.

The college will advertise in particular in the United States, Japan and the Middle East. Although the Regency buildings surrounded by Queen Mary's rose gardens and a lake make it an impressive buy, its unique position in a Royal Park also poses problems. There are some educational restrictions for its use.

Bedford is on the verge of selling its sports ground and has sold a hall of residence and a principal's flat. On the insistence of the University Grants Committee, the college has made a full investment cost appraisal of the merger, which shows that Treasury money will be saved.

The college has also asked the UGC for bridging finance to enable the merger to go ahead, and is exploring other ways of borrowing money, providing security can be found.

The £16m will provide for a huge programme of capital expenditure at Royal Holloway College's site in Egham, Surrey, including the extension of the arts building, a temporary library and a new earth sciences building.

The joint college is still unnamed but is about to produce a joint prospectus. By next year all entry will be to Egham, except for four departments.

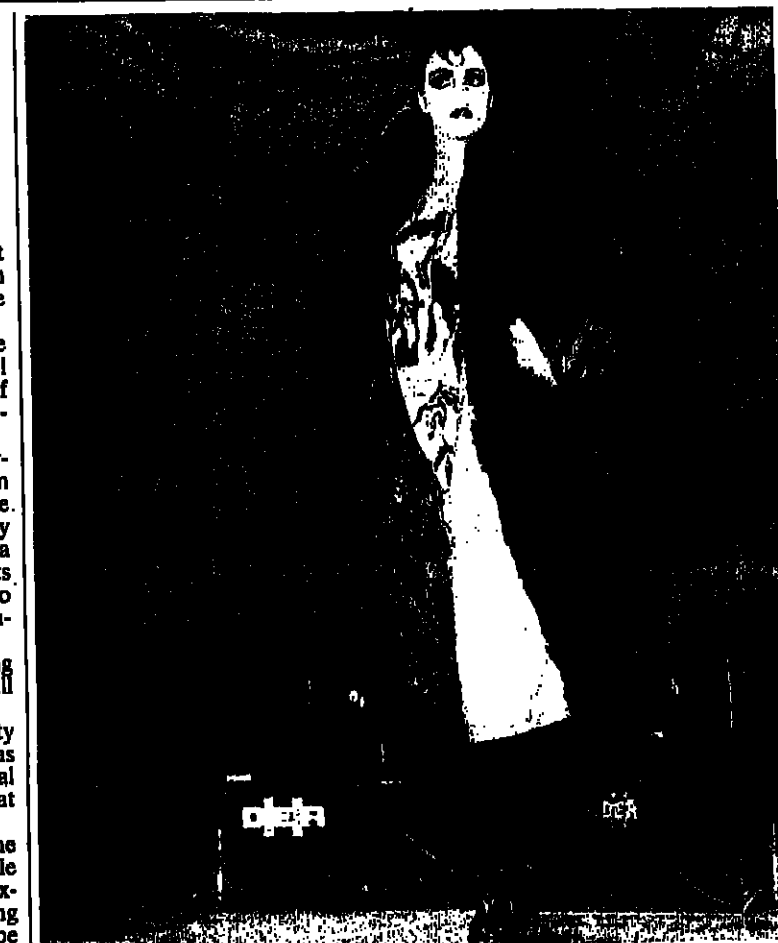
Two big problems remain. New draft statutes which will legally unite the two colleges need to be before Parliament by November if the merger is to be effective by 1984.

Second, the RHC does not have a governing body and does not want one, while Bedford does. One plan is that the Bedford governors should vote themselves out of existence.

Rethink urged

Universities must rethink their contribution to continuing education in the light of government initiatives, other providers, and restricted funding, Mr William Shelton, under-secretary of State for education, told the conference of the Universities Council for Adult and Continuing Education this week.

Universities were as central to the Government's PICKUP scheme (professional industrial and commercial upgrading) as polytechnics and colleges, he said. They should re-evaluate their role as adult educators and make sure they were not duplicating provision elsewhere.



Lynda Katherine Nadin, a final year BA honours textile and fashion student at Middlesex Polytechnic designed this fur-trimmed coat, dress and mortar board which was one of the designs shown at the degree show at the London Fashion Fair at Olympia.

Summit call for joint research

Proposals for a wide-ranging programme of cooperative research by the seven major industrial nations will be discussed at the next economic summit in May. The report of a working group set up by the last meeting of heads of state, published last week, puts forward projects in 18 areas, including fusion power, transport and robotics, most of which would need new money to be carried through.

The working group on technology, growth and employment was set up after the summit at Versailles in June 1982, mainly at the behest of the French president, Francois Mitterrand. The group brought together the key science advisors from France, Canada, West Germany, Italy, Japan, the United States, Britain and the European Commission, including Dr Robin Nicholson from the British cabinet office.

The multinational authority dictated generally andyone conclusions, but the group suggests that the cooperation it has begun provides a solid basis for future action. The projects proposed were chosen from areas which met four criteria. They should: benefit from international cooperation; be in the public sector; represent major steps in science and technology; and be of interest to the developing world.

In addition the group points out that Dr Boyson's information on the total contribution of De La Salle to initial teacher training nationally is misleading.

The report says that "virtually all establishments are visited once every year, and in most cases, more often; visits are still less frequent than in schools. Further education inspectors are thought to spend about 34 per cent of their time on visits, compared with 48 per cent by schools inspectors."

The report's recommendations that the size of the Inspectorate should remain unchanged and that there is a continuing need for advice to the Secretary of State on higher education, in spite of the existence of the Council for National Academic Awards, were accepted in the Government's response. A Study of HM Inspectorate in England and Wales, HMSO £4.50.

Angry ACSET protests about White Paper

by Patricia Santinelli

Members of the Government's advisory body on teacher training have protested that their work has been pre-empted in the White Paper on teaching quality.

The chairman and the vice-chairman of the Advisory Committee for the Supply and Education of Teachers had not been told that the White Paper would contain detailed criteria for course reform.

They had been led to believe that this task lay under their remit and the sub-committee on teacher training met last Friday with the specific purpose of drawing up draft criteria before a main committee meeting next month.

The White Paper intends to eradicate bad teachers and improve the quality of teaching in schools. This would involve a variety of reforms in teacher training courses, changes in the way qualified teacher status is awarded and amendments to regulations. Course approval would depend on these being carried out.

Embarrassed DES officials and members of Her Majesty's Inspectorate attempted to placate ACSET members at last week's meeting by claiming that the White Paper was far less restrictive than it appeared. They said it had interpreted the case for primary subjects much more

widely, was less restrictive on main subjects and opened up the case for interdisciplinary subjects.

Although ACSET members are now resigned to sorting out the criteria proposed in the White Paper, they are also making a big push for more resources. They pointed out that the tough criteria made institutions vulnerable when they lacked the resources to put them into operation.

As a result it is likely that the question of resources, which was totally avoided in the White Paper, will be spelt out more clearly and will form an important part of any future agenda. A DES official is due to report in May when he has studied the work being carried out by all three ACSET sub-committees.

The resources question was taken up this week by Mr Ken Gardner, chairman of the Polytechnic Council for the Education of Teachers. He pointed out that the quality of teaching could only get better after conditions of services and resources improved.

Mr Gardner added that if Sir Keith Joseph was seriously worried about the skewed age profile of teacher training staff, he should provide "new blood" money to eradicate it. The current age profile was a direct result of Government cuts in policy, he said.

Further bid to rescue college

Roman Catholics are preparing a further affidavit and may take their case to a judge in chambers in their legal fight to stop the Secretary of State for Education from closing De La Salle College, Manchester.

This follows a Department of Education and Science affidavit which asked the Catholic Education Council and trustees of the college to answer certain "undisclosed questions".

The CEC and trustees of the college began legal action soon after Sir Keith Joseph, the Secretary of State, made it clear that he had "no intention of reopening De La Salle, one of 10 institutions listed last November to stop teacher training."

They argue that Sir Keith's decision is illegal and amounts to a breach of promise. Catholics should be allowed to retain their historic share of teacher training places at least until the end of the century. If De La Salle went, this share would be reduced from 9.3 per cent to 8.4 per cent of total public sector places.

The college's staff and students action group this week attacked Dr Rhodes Boyson, junior education minister for using inaccurate figures when answering questions on the college in the House of Commons.

The action group says that 900 full-time student places were available at De La Salle. In April 1981 the college was given a revised DES target amounting to 700.

It follows from this that the total of 680 full-time equivalent students estimated for 1982 represents a shortfall of only three per cent and not the 25 per cent implied by Dr Boyson's figures.

In addition the group points out that Dr Boyson's information on the total contribution of De La Salle to initial teacher training nationally is misleading.

report, also recommends that more centrally-planned inspection exercises should be conducted in colleges and polytechnics and more national publications produced for the sector.

Although it is estimated that "virtually all establishments are visited once every year, and in most cases, more often; visits are still less frequent than in schools. Further education inspectors are thought to spend about 34 per cent of their time on visits, compared with 48 per cent by schools inspectors."

Teachers get back 75 places

Scotland's education colleges have won back 75 secondary places from a proposed cut in intake of 200.

The Scottish Office initially suggested a cut in secondary students from 1,000 to 800, but local authorities, education colleges, and the professional teaching body, the General Teaching Council for Scotland, warned against such a severe cut.

The Scottish Education Department is likely to have been influenced by representations from the local authorities, particularly Strathclyde Region. The region said it was still finding it "difficult to recruit teachers in certain subjects, including geography and home economics which were considered to have a surplus."

Mr George Younger, Secretary of State for Scotland, has advised the colleges to give priority to students wanting to teach business studies, English, home economics, mathematics, civics and religious education, with half the college quotas covering these subjects. The colleges also told the SED that more teachers were needed to cope with changes in the curriculum and exams.

The Association of Lecturers in Colleges of Education in Scotland has warned that it may withdraw its cooperation in establishing an all-grade teaching profession with the introduction of a primary degree.

The ALCES is angry about its exclusion from the working party on pre-service primary training.

The 20-strong working party set up last month by the Scottish Secretary has members from the Educational Institute of Scotland, the National Association of Schoolmasters-Union of Women Teachers, the Convention of Scottish Local Authorities and the General Teaching Council. It is seeking written submissions from ALCES, the Association of University Teachers and the National Union of Students.

Reduce Inspectors' role in course approval, says Rayner

Doubts about the role of Her Majesty's Inspectorate in further and higher education are expressed in the report of the Rayner inquiry published last week.

The report, A Study of HM Inspectorate in England and Wales, says that inspectors' involvement in the course approvals system has distorted their role. It adds that there is "an overwhelming case" for reducing this involvement because it syphoned

off a significant part of their time. "It is sufficient to say here that in exercising this function HMI has tended to become as concerned with college course planning as with inspecting the reality of the provision made."

The report says: "In this context, college visits can sometimes have more of an administrative than an inspectorial flavour."

Lord Rayner's team, which took more than a year to produce its

Beloff's blueprint for change

by Peter Scott

A five-point plan for the overhaul of higher education was proposed by Lord Beloff, former principal of the private University College at Buckingham and now vice chairman of the advisory board of the Conservative Research Department, in his speech to the Conference of University Administrators.

His proposals were:

- Replacing state grants by endowments. Universities would receive their income from the interest on these endowments.
- Creating world-class centres of excellence. Other institutions would have to concentrate on research in particular subjects or on teaching.
- Ending the binary policy and abolishing the Council for National Academic Awards.
- Reforming the University Grants Committee to make it stronger and more representative.
- Establishing a separate ministry for higher education and science. This would leave the Department of Education and Science responsible only for schools.

Lord Beloff warned that the universities had either to make a new beginning or accept catastrophe. This would come not from the present cuts but from persisting in the illusion that the present setback was temporary. Universities had to accept the lessons of the past two or three decades and adjust their planning accordingly.

The most important was that universities could not escape from the general rule of life that he who paid the piper called the tune, although the university establishment had taken a very long time to realize this. If universities wanted autonomy they must seek other funds.

"The message is eventually getting through as universities try to establish links with industry and receive extra income from overseas students' fees," Lord Beloff said. "But to see such private income as merely topping up public funds is not sufficiently radical. Our whole public provision for higher education will have to be reexamined."

Universities needed proper endowments not extra income to make up

shortfalls in current income. Although the idea of gentlemen of independent means had fallen into disfavour because modern sensibility disapproved of the *rentier*, the same objection could not be made about institutions of independent means. Perhaps the state might agree to convert part of its annual offering into endowments.

Lord Beloff also argued that it was impossible for Britain to maintain 45 universities of world class. "If we attempt to advance on too broad a front, we will not only fail but actually fall behind because those universities which should be world class will be deprived," he said.

If there was in the university sector "a recognized, although not immutable, grading of institutions", it would be right to end the present binary policy. Some polytechnics should be allowed to become universities; some should be amalgamated with universities; and some might come under the academic wing of universities which would be far more successful than continued subjection to the CNA.

Lord Beloff emphasized that this more differentiated system could not be administered by the present UGC. "The UGC was admirably designed for a small number of universities making up a tightly knit university community when their income only came partly from central grants, but it had become less and less suitable even before the present troubles. With part-time members it could only scratch the surface of necessary investigations," he said.

So a reformed UGC would have to be stronger and more representative. Because the polytechnics would be included the whole question of national-local government relations would have to be rethought. Finally a separate ministry should be created for higher education and science. The fact that the DES was responsible for all education put universities at a bargaining disadvantage.

Lord Beloff admitted that there might be a contradiction between his plan to increase the autonomy of universities by endowments and his desire to see more differentiation in higher education to meet national needs.



Mr Paul Goodman, the FCS's new chairman, listens to Mr Edward Heath address the conference.

Tory student group moves to the left

by David Jobbins

Right-wingers have lost control of the Federation of Conservative Students after three tempestuous years.

The organization's annual meeting in Durham thwarted an attempt by the current chairman, Mr Brian Monteith, to continue in office for a second year. Instead it elected Mr Paul Goodman, who was the Conservative candidate in this week's National Union of Students presidential election.

Mr Monteith was ahead of his rival by only one vote on the first ballot but failed to pick up votes from the eliminated third place candidate Mr John Hayes.

In the final ballot Mr Goodman polled 154 votes, Mr Monteith 118 and other elections gave Mr Goodman a 6-5 majority on the FCS national committee. But the Monday club faction, with whom he made a pact to unseat Mr Monteith, failed to get any seats.

Mr Goodman is a recent convert to the idea of student loans but is firmly on the left of his party. He has been on the National Union of Students executive for the past two years. The conference was one of the quietest for some years and the row

over alleged non-existent associations failed to erupt to the level of past years.

Three years of right-wing control in the FCS have been punctuated by a series of allegations about voting irregularities and other complaints culminating in last year's high-level internal Conservative Party inquiry which found that Mr Monteith had been guilty of errors of judgment.

Despite its troubles the FCS claims it is now bigger than ever. The party's vice-chairman, Mr Michael Spicer MP for Worcestershire South, said its problems were those of success. "It is the most dynamic successful student body in this country," he claimed.

The strains which will test the uneasy truce between the wets and the far right which unseated Mr Monteith were readily apparent just a few hours after the elections.

While wets enthusiastically supported the former Prime Minister, Mr Edward Heath, the right attempted subtle disruption of his speech on the North-South dialogue and Brand Two by applauding rapturously when he paused for breath between sentences. But the tactic soon failed and Mr Heath, a life patron of the FCS, was able to continue his speech largely uninterrupted.

Call for less reliance on state

Ministers are keen to see universities become less dependent on state finance. Although they accept that the heavy cost of "big science" precludes a return to 1945 when only half the universities' total income came from the Government, they believe there is still scope for institutions to look to other sources of revenue.

Mr William Waldegrave, under-secretary for higher education, told the Federation of Conservative Students conference in Durham: "I do not rule out some rather radical experiments with the cooperation of institutions over the next few years in trying to release the energies of some of these institutions."

The Government's contribution to the universities' total income had fallen from 90 per cent to 85 per cent over three years and he indicated that a further five per cent reduction might be possible over the next 10 years.

Changes in the overseas students

fees policy meant that 3 to 4 per cent of the universities' total income now came from the students themselves and not from the Government.

Government will not be the only paymaster and it will not matter nearly so much what people like me say to the institutions, and that is a very good thing," Mr Waldegrave said.

He was contemptuous of academics and others who accused ministers of damaging institutional autonomy. "This Government, and any government faced with problems we are facing, has a perfect right and duty to require savings," he insisted.

The fact that there had not been a single compulsory redundancy meant that universities were shirking their responsibility in the shift towards science and technology, he claimed. "The hard decisions are being shirked which industrial companies would have to take if they were shifting priorities."

'Take older women out of slum area'

£1m should be spent on education for older women who currently comprise the "slum area" of continuing education's potential customers, the author of a prestigious survey on education for older people said at a conference on education and the older woman.

Adult education would stop being the sacrificial lamb while £1000m was being spent on 16 to 19-year-olds, said Mrs Enid Hutchinson, author of *Learning and Leisure in Middle and Later Years* at a conference organized by the Forum on the Rights of

Elderly People to Education (FREE).

The recent Advisory Council for Adult and Continuing Survey *Adults, their Educational Experience and Needs* which updated her work shows that the 15 per cent of the population with least experience and expectations of education were older women, she said.

Mrs Joan Lestor, MP, Labour Party spokesperson on women's rights, said people were deterred by the public and media image of elderly women as sweet old ladies. "No one

ever talks about sweet old men," she said.

In particular staff in residential homes tended to assume elderly people were intellectually empty. "They tend to assume that people have never read a book."

Voluntary organizations working with women must build into their members a belief that education throughout life was a right, said Mrs Anne Ballard, general secretary of the National Federation of Women's Institutes.



Joan Lestor: a question of image

Green light for the 17-plus

The Government gave the long-awaited 17-plus pre-vocational qualification aimed at around 80,000 young people the go-ahead this week.

The qualification, which is aimed at students who do not pursue courses up to A level, will be available in schools and colleges from September.

The 17-plus is to be administered and developed by a joint board of the Business and Technician Education Council and City and Guilds with representatives of the Royal Society of Arts and the GCE and CSE boards.

The board for pre-vocational education, which is to consist of a chairman and 13 members, will receive £450,000 over three years from the Government to carry out initial work.

Their main task will be to accredit one year full-time courses starting this September as well as develop more complete and coherent arrangements for pre-vocational courses no later than September 1985.

SSRC allocates cash shares

by Paul Flather

The Social Science Research Council is trying to produce a fair system for allocating about £6.7m available for grants and training for 1983-84 between its seven multi-disciplinary committees.

At the last council meeting the seven committee chairmen put in bids equivalent to three times the amount available, and left the SSRC with the problem of deciding who should get what.

The final allocation is considered very important because it will establish precedents for funding levels, and a pecking order for the committees which will certainly run for three years, and probably for longer. The committees started work last autumn.

At present the social affairs committee, covering social anthropology, sociology, social psychology, and health economics, and the industry and employment committee, covering industrial relations and sociology, management, and business and labour history, are set to take the biggest shares.

Some committees have inherited large fixed commitments supporting long term projects and established research units, while other committees have few commitments and are looking for more money to hand out in grants.

With the SSRC as a whole facing a new round of cuts of about 65m over three years imposed last year by the Government, it is the committees with more free money that are set to lose out.

Professor Brian Robson, chairman of the environment and planning committee, has already written to Mr Michael Posner, the SSRC chairman, expressing his concern over any system that discriminates against committees like his own.

Professor Robson, professor of geography at Manchester University, has put in a strong bid to fund more research on the inner cities and urban decay, and on managing resources conservation.

Professor Raymond Illsley, chairman of the social affairs committee, has put research into unemployment and its effects, and into inequalities

in health, at the top of his list of priorities. He said the SSRC faced a "highly complicated arithmetical" task.

The bids are now being scrutinized by SSRC officers, and paper setting out the allocation and the method of distribution will be presented to council for approval in early May.

Meanwhile the committees have been finalizing their list of priority research areas and the criteria they will use to sift grant applications. They are also deciding how student awards will be distributed, noting the Government's request for more emphasis on open competition, and less on linkage to university departments.

Talks between the SSRC and the four trade unions representing the staff have re-started. Staff are now working normally, following a nine-day strike and a work-to-rule. The return management has agreed to seek a cut of just 18 posts in the first year with no compulsory redundancies. Overall a cut of 30 posts from the present total of 146 is sought.

Fears for mature diploma

by Olga Wojtas
Scottish Correspondent

Students at Newbattle Abbey College near Edinburgh, Scotland's only higher education college for mature students, fear that the Scottish Education Department intends to withdraw funding for its main course.

The residential college which runs a two year liberal studies diploma accepted as a university entrance, is to be reviewed by a Government commission which examines quangos.

The college, whose former students include the noted Scottish writers Edwin Muir and George Mackay Brown, has recently been visited by SED inspectors as part of the Pitzky Review which listed various institutions to be investigated. The college is run by a board of 24 governors, six of whom are nominees of the Secretary of State for Scotland, and is almost entirely funded from SED grants to adult education.

The students claim that the Scottish Office wants to axe the two year diploma, leaving the college to run profit-making short courses. They also say that the college may become an annex of Stirling University for weekend courses.

An SED spokesman said there was nothing sinister about the review, and denied that there were plans to abolish the two year diploma. The students are seeking a meeting with SED officials for reassurances about the course, and Mr Alex Eadie, Labour MP for Midlothian, is to ask the Scottish Secretary next week about the college's future.

No shift in power base

The universities' crisis does not seem to have increased the influence of lay people in their government, according to a straw survey of restructuring plans carried out by CUA members.

This contradicts the popular theory that academics would find it difficult to take difficult decisions and as a result effective power over the management of the cuts would drift from senates to councils with their lay majorities in many cases.

But the CUA survey found that in the 23 universities covered there was not a single case in which lay people were seen as most influential in drawing up plans to meet the crisis. In 12 of the 23, recent events had not led to any permanent change in the balance of power in university government.

The most powerful voices in restructuring were either senior academics (most influential in 12 universities) and vice chancellors (most influential in 11). In only three uni-

versities was it felt that restructuring had led to permanent changes in university government.

However, the CUA survey does support another common theory, that universities would be forced to resort to emergency procedures to draw up and argue through restructuring plans. Twelve of the 23 established ad hoc committees for this purpose, while only seven relied on normal standing committees.

So the message of the CUA survey seems to be that most universities tackled the twin challenges of the cuts and restructuring by establishing special committees outside the normal machinery of government, on which the vice chancellors and senior colleagues were most influential; that the plans produced had been approved without significant amendment by senates and councils; and that lay people have been successfully kept at arm's length.

Leaders: back page

Protests over UGC fines

Hull and Keele Universities have protested to the University Grants Committee about being fined for taking too many new students, and Hull has said it wants the money back.

They were two of seven universities fined a total of almost £250,000 in February for allegedly exceeding the UGC target numbers. The others were Dundee, Heriot-Watt, Swansea, which is also to contest the decision, Essex and Cardiff.

Both Hull and Keele make the same point: the UGC had not laid down specific targets for the interim years. Hull's vice chancellor, Sir Roy Marshall, has told the UGC of the university's deep concern that it could contemplate a retrospective penalty "for exceeding in 1982/83 an unspecified intake of students by an unspecified number and is threatening a prospective penalty for 1983/84 without thinking it necessary to indicate the number we should aim to admit for that year."

Sir Roy reminds the UGC that it told the House of Commons Select Committee on Education and the Arts in 1981 that a university which exceeded its numbers would not be penalized, unless the students were suffering as a result.

He has asked the UGC to rescind its decision about the fine, but also to say what numbers Hull should aim at in 1982/83 so it can avoid a second penalty.

Keele University considers the fine summary and punitive. The vice chancellor, Dr David Harrison, has told the UGC that the university is on target for 1984/85 but there is no target for 1982/83. There was no justification, therefore, for the penalty.

He has also put the point that the UGC has again failed to understand the effect of Keele's range of three to four-year courses.

NAB looks at plan for degrees by degrees

by Karen Gold

The National Advisory Body is considering splitting degrees into three one-year stages - certificate, diploma and degree - in order to encourage adult students intimidated by a full three-year commitment.

The idea is included in the NAB consultative document to be circulated around institutions in the summer. NAB secretary Mr John Maynard told the annual conference of the Polytechnic Association for Continuing Education.

"There is a possibility that one of the deterrents to entering higher education is the length of time for which students appear to have to commit themselves," he said.

Access would be one of the subjects for the newly established NAB continuing education group to consider, he said. The group would meet for the first time after Easter, and would report by the end of 1983.

Since the NAB at present has no definition of continuing education, nor a view on it, the group's major tasks would be to provide those. In fact a wide definition of continuing

education might comprise half of all local authority higher education provision, meaning 166,000 students and resources of £330m a year.

"What I am looking for is a strong voice coming through from the continuing education group to the board and the committee about the importance of some of these very diverse modes and developments in higher education alongside the conventional ones," he said.

The group should provide the NAB with an understanding of continuing education and its role educationally and in social, economic and cultural terms. It should advise on its mechanisms: non-traditional forms of entry, credit transfer, course approval, staff training, fee income, structures and retention, and sources of funding, including non-public sector funds.

But Mr Bevan emphasized that the NAB did not accept a purely commercial view of continuing education. "We aren't in the office happy with the proposition that continuing education should be equated with something that's mid-career and entirely employer-sponsored."

Confidence crisis confounds Higher Education Foundation

The Higher Education Foundation and its conference wing, the Higher Education Group, are undergoing a crisis of confidence about where they should go next in aims, membership and organization.

At the annual conference of the HEG at St Anne's College, Oxford, at the weekend, Professor John Dancy, the chairman of the trustees, said the foundation had felt for some time it was failing to disseminate its ideas and influence the course of higher education sufficiently.

A regular, enlarged newsletter and

the publication of a series of occasional articles are under consideration and members were asked to volunteer as editors of the newsletter or for the editorial board, which might be set up.

An impromptu meeting about the future organization brought other concerns of members to the surface. Mr Ron Barnett, assistant registrar at the Council for National Academic Awards, said that in 1980 he had attended the conference for four years and still did not know much about the way in which the HEG and

HEG were run, who was on the decision making committee and how they were appointed.

"People will only contribute if they feel that they can participate in the organization," he said and wanted to see elections to posts and committees and an annual general meeting with proper accounts presented.

Mr Terence Miles, a retired geologist said that the conference was long on thought but short on action. "High-powered academics attend this conference but nothing crystallizes out of it. We are left

with a feeling of inconclusiveness."

The lack of consultation and possibility that it could become in a few years a "small, sterile group with no new blood" was a fear expressed by Dr Geoffrey Price, chairman of the conference group.

Dr Price said he had considered holding an annual meeting on an evening of the weekend conference at which the accounts could be presented which would be separate from the usual "brainstorming" committee meeting which threw up topics and ideas for future meetings.

THE BRITISH COUNCIL

International Specialist Courses and Seminars 1983

These courses provide opportunities for senior education specialists to learn about recent developments and to participate in high level discussion with colleagues from other countries.			
	1983		
Teacher Education in a Changing Context (Dr Chis Sutton/Dr Tom Bone)	10 - 22 April	Leicester/Glasgow	£540
School Inspection: an International Seminar (Norman Thomas CBE)	8 - 20 May	Grantham	£895
ELT Techniques & Methodologies for Teacher Trainers (Mario Rinaldi)	26 June - 8 July	Canterbury	£485 (non-residential £280)
Educating Library Users (Colin Harrie)	3 - 15 July	Sheffield	£545 (non-residential £320)
New Information Technology in Libraries (Prof. W L Saunders CBE/Prof. M F Lynch)	3 - 21 July	Sheffield/London	£590 (non-residential £375)
University Administration (Roy Butler)	30 August - 10 September	Oxford	£685 (non-residential £375)
Archives Administration (Dr Felix Hill)	4 - 18 September	Oxford	£695 (non-residential £405)
Materials and Courses for Distance Education (Wyllie Pyle/Dr Gays Manwaring)	11 - 22 September	Dundee	£545 (non-residential £320)
Primary Education: an International Seminar (Leonard Marsh)	18 - 30 September	Lincoln	£545 (non-residential £320)
The Training and Professional Development of Academic Staff in Universities (Dr Alvin G Harding)	18 - 30 September	Oxford	£695 (non-residential £405)
Video and English Language Teaching (Marion Gaddes)	2 - 14 October	London	£515 (non-residential £360)
Library Planning and Design (Godfrey Thompson)	18 - 29 October	London/Midlands	£725 (non-residential £420)
Modern Developments in Medical Librarianship (Miss F M Picken)	23 October - 4 November	London	£595 (non-residential £405)
Communicative Activities and Drama in the Teaching of English (H L B Mobey)	30 October - 11 November	London	£595 (non-residential £345)
Management and Administration of Sport (Olve W Newson)	20 November - 2 December	Maldenhead	£595
Computers in University Administration (Prof. R W Ewart)	8 - 14 January	London	Fee to be announced
Library Resources in Higher Education (D J Foshell/D T Lewis)	8 - 20 January	London	Fee to be announced
Communicative Activities in ELT: Methodology and Materials (Bob Jordan)	26 March - 6 April	Manchester	Fee to be announced
Aspects of Non-University Higher Education: an International Seminar (Dr R Rickatt)	28 March - 6 April	London	Fee to be announced
Teaching Practice and Assessment for ELT (Ken Crispwell)	28 March - 6 April	London	Fee to be announced

Prospectuses and application forms are obtainable from:
The Director, Courses Department,
The British Council,
65 Davies Street, London W1T 2AA.

Names of Directors of Studies are shown in brackets.

Residential fees include accommodation (and meals as stated in the course prospectus). Non-residential places are available on some courses as indicated.

North American news

Peace academy faces uphill battle in Congress

from E. Patrick McQuaid

CAMBRIDGE, Mass. Plans for the creation of a new American postgraduate diplomacy school - ostensibly the US Academy for Peace - have been gaining strength since those who signed the Declaration of Independence first proposed them in 1793, but they came under heavy fire recently from Senate hawks and scholars with institutions such as the Naval War College, who fear the academy might put them out to pasture.

Last year 54 senators and 130 representatives cosponsored legislation to create and fund the school with a two-year start-up allocation of \$3.1m (\$2.1m). It was approved at that time by the Senate labour and human resources committee, but expired with several other Bills in the rush to adjourn Congress at the close of the year.

This time round it has 53 sponsors in the Senate where subcommittee hearings have just got under way. Similar proposals have not yet been drafted for House consideration. More than 30,000 citizens have contributed to the National Peace Academy Campaign, a private lobbying effort.

The US Academy for Peace would conduct research, run seminars and possibly grant graduate-level degrees to diplomatic and military professionals in techniques for resolving conflicts, global problem-solving, and general peace-keeping.

The idea has become very popular this year, backed heavily by supporters of a nuclear weapons freeze and opponents of American intervention in El Salvador, which has turned many conservative members of Congress. Senator Jeremiah Denton, a Democrat from Alabama, said the plan smacked of "Jane Fondaism" - a reference to the actress who strongly opposed US activity in Vietnam.

Some 139 similar proposals have touched their way through Congress since 1940 to create either an academy or a US Department of Peace, but none has made it to the hearing stage. The present proposal, a rehash of last year's, has been seven years in the making, according to its architects, and gained additional momentum during last summer's conflict over control of the Falkland

Islands. Professor James H. Laue, on the sociology staff at the University of Missouri, told subcommittee members last year that "peace is neither utopian nor a sign of weakness or cowardice. Peace requires knowledge, judgment, and skill no less complex than what is required for war".

The United States failed both Britain and Argentina, he testified, when it ignored "conflict analysis" techniques developed in recent years. The Americans suffered, he explained, "a basic role conflict between our expressed role as mediator and our actual underlying alignment as an advocate for one of the parties: Great Britain".

This year Senator Spark Matsunaga, a Hawaiian Democrat, said the academy would "immensely enhance the role of the United States as a peacemaker worldwide" while also reducing the risk of a nuclear war. Mr Matsunaga headed a commission appointed by the White House in 1979 to explore the feasibility of such a school, but Mr David Stockman, the President's director of the Office of Management and Budget, has said that "a new government entity in this area is unnecessary".

Supporters of the new college say they could keep it afloat for four years with a \$60m appropriation and point out that that figure is one-fifth the price of a B1 bomber.

The executive director of the lobbying campaign said that "establishing US leadership in the field of creative peacemaking" would be the first fringe benefit of establishing the academy. About a quarter of the student body would come from other countries, according to plans.

Reagan administration sources, however, say the expenditure cannot be justified with so many other government agencies and private institutions engaged in similar endeavours.

At nearby Harvard University, however, members of the Harvard school programme, embrace the concept. Conflict resolution techniques misinterpreted at Harvard helped shape the Camp David-Mid-East agreements and have been successfully applied in a series of hostage-taking incidents.

Sex bias ruling overturned

The University of California has been ordered by a federal judge to provide a comprehensive summary of confidential peer review records in Professor Julius Zaushtinsky, who has filed gender discrimination charges against the system's Santa Cruz campus.

The decision is viewed as favourable for the university because it overturns a lower court order that Professor Zaushtinsky was entitled to see the full contents of her personnel file and those of seven males with similar employment histories. The professor, who held tenure, says she was denied further promotion because she is a woman.

The court ruled, however, that Professor Zaushtinsky may be allowed to obtain full copies of her own personnel file if the summary indicates further evidence in that file to support her charges.

In Texas recently, a federal judge rejected arguments from the University of Texas at El Paso that administrators simply "forgot" to promote a woman maths instructor for seven years, and ordered that Ms Julie Hansen be paid \$15,428 (about £10,500) for damages. The university was also made to pay her legal costs.

Canada freezes out the Russians

Things could heat up around the North Pole if Canadian scientists find what they're looking for - a geological dead of ownership to an 800-mile chain of submerged mountains linking Asia and North America, and fiercely contested by the Soviet Union.

Some 50 Canadians, mainly geologists, will spend two months exploring the region, called Alpha Ridge, which many believe is an extension of Ellesmere Island, the northernmost piece of land under Canadian sovereignty. The Arctic safari is known as CESAR - the Canadian Expedition to Study the Alpha Ridge - and will also be looking for evidence of oil and mineral deposits.

A permanent floating research centre called NP25 has been manned by Soviet scientists for some time. The CESAR group will work nearby and probably keep radio contact with the Russians.

Under the international Law of the Sea Treaty which Ottawa signed last year, Canada has 10 years to file a claim on the property as an extension of the continent beyond its 200-mile territorial limit. The Soviet Union is expected to file their own claim.

Spring fear of German measles



American health officials are worried that an outbreak of German measles among students at a Mid-West campus could lead to a national epidemic if the 32,000 students scatter across the country during their spring holiday and take the disease with them.

The National Centre for Disease Control, which is in Atlanta on the east coast, has sent staff to the Bloomingdale campus of the University of Indiana to help curb the outbreak. Nearly 200 students at the sprawling campus were reported ill in late February.

Students returning from their mid-term break are required to show "proof of immunity" before being allowed back into classes. About 20,000 had been given vaccinations from the university's student health service.

The outbreak of rubella, the largest to strike anywhere in the

United States, was traced to Purdue University in January when 15 students came down with it. The measles appeared at the University of Indiana within a month.

The state of Indiana reported only two cases of confirmed German measles last year. All American states require immunization against measles and other childhood diseases before youngsters can enter school. Last year 1,697 measles cases were reported nationwide, according to the National Centres, a 44 per cent drop from the previous year's record low.

A national health official speculated that many Americans vaccinated before 1968 may in fact not be immune because the type of vaccine given before then, and the way it was administered (before their first birthday) are now thought to be wrong.

Racial pressure stops lectures

Two of the United States' most prominent civil rights lawyers have abandoned plans to lecture on racial discrimination at Stanford University in California this spring, fearing a repeat of the black student opposition they faced when conducting a similar course at Harvard in January.

Mr Jack Greenberg, executive director of the National Association for the Advancement of Colored People's legal and educational defence fund, and Mr Julius LeVonne Chambers, president of the organization, were scheduled to deliver the lectures for three weeks in May.

The controversy involves the colour of Mr Greenberg's skin - white. While Mr Chambers is black, students at Harvard argued for months that a course on civil rights, regardless of Mr Greenberg's outstanding record as an advocate for American minorities, should be taught by a minority member (TZES, September 24). In November students at Harvard Law School voted to urge the university to beef up its minority hiring efforts and the course went ahead as scheduled.

Many Harvard students boycotted the class, and the black students' union at Stanford called for similar measures when it learned that the two were planning to lecture there.

A federal appellate court in Atlanta has upheld charges that the president of Savannah State College, a predominantly black institution in Georgia, forced Dr Anita Lincoln, a white lecturer, off the teaching staff because of racially motivated criticism lodged against her by black teachers and students.

The state of Georgia is challenging the court's determination that liability extends to the Georgia Board of Regents, the state ministry for higher education, and also to two individuals - Ms Evelyn Terrell, head of department, and Mr Clyde Hall, acting campus president - named in the original suit.

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Canada freezes out the Russians

The expedition got under way earlier this month when 50 Canadian forces, engineers, and the C-130 Hercules, parachuted into the region about 240 miles south-west of the Pole. The squad, using dynamite and bulldozers, is digging out two airstrips to receive the scientists who will camp in tents on the ice.

This expedition has been three years in the planning and will bring with it the latest in computer-aided equipment to sample layers of sediment some 10 feet beneath the ocean floor. The last major polar expedition was in 1979. Government used then could probe only three feet.

Strikers acquitted on language technicality

Quebec may have to drop 29,000 charges against educators, civil servants, and hospital workers after the government prosecution of 12 junior college teachers who went on strike was dismissed because their disputed contracts were written in French.

Sessions Court Judge Gerard Girouard last week threw out charges against the teachers on the technicality. Legislation imposing a three-year cost-cutting contract on all public sector employees and removing their right to strike during that period contained 80,000 pages of appended contracts written in French only, "a flagrant violation", wrote the court in a 34-page decision, "of the Canadian constitution, which guaranteed the equality of both languages" in the legislature.

The Government, immediately announced it would appeal against the ruling, noting that the contracts would remain in effect and that it had every intention of prosecuting all who violated the back-to-work legislation.

"The omission on the part of the legislature renders the text unconstitutional", Judge Girouard wrote. The documents should have been written in both of Canada's official languages, French and English, he contends.

The legislation, known as Bill 105,

imposed the contracts on 325,000 civil employees. If upheld, the court's ruling will invalidate the contracts and force the Government to drop charges against an additional 26,000 provincial workers.

Attorneys for the teachers said they were confident they would win the case on additional grounds when the Government files with the Quebec Superior Court. The case would then go to the Quebec Court of Appeal and finally the Supreme Court of Canada.

"Paradoxical" is how a Francophone Quebecer who teaches at a Montreal Community College, described the ruling. "I'm pleased with the result", said the teacher, "but I would have been more pleased if Judge Girouard would have given us a judgment on all our arguments".

According to a White Paper on restructuring the provincial school system, from Mr Camille Laurin, by the end of 1983 all English institutions would be required to communicate with one another in French only. Internal communications would also be in French, although English would be permitted. He further proposed that elected school boards be abolished and replaced by corporate school councils, elected by parents in each school.

Ottawa orders \$C102m curb on spending

Ottawa plans to curb spending on education and health throughout Canada's 10 provinces by \$C12m (\$26m) during the 1983-84 fiscal year. For higher education that means the provinces will receive \$C57m less than they were counting on, if the federal plan to keep wage rises to 6 per cent this year and 5 per cent next are maintained.

Locally, the provinces were hoping their present spending formula, on which the Government would continue to pay 13 per cent, about 60 per cent of all Canadian higher education funding, derives from federal support.

The overall budget plan for higher education is \$C3,200m. According to figures from the Treasury Board and the Secretary of State, Mr Serge Joyal, the provinces would be entitled to \$C6,777m, but the two-year austerity plan the Government has committed itself to the provinces to the provinces will receive only \$C6,655m in cash.

The Government maintains that about a third of the money it transfers to the provinces through its established programme, financing systems should be spent on education. The Canadian Association of University Teachers and the Canadian Federation of Students have each issued statements deploring the cuts.

Some 446 professors were to be hired, according to the contract, for the interim term but the university hired only 97.

A representative for the university said the administration was contemplating an appeal to the Supreme Court of Canada. The ruling, as it stands now, requires the university to hire as many as 383 new senior staff.

Overseas news

German system 'must reform' Poles clamp down on student activities

from James Hutchinson

BONN

The president of the West German Association of University Vice-Chancellors, Professor George Turner, has declared that the country's entire educational system is in urgent need of reform.

He has suggested that Germany should follow the Anglo-American example by drastically reducing the length of university courses.

In a television discussion with journalists and industrial leaders, Professor Turner said that overcrowding had put the universities in a catastrophic plight. Mediocre students found it particularly hard to cope with the conditions, he said.

He pointed out that school-leavers taking the *Abitur* at the age of 20 would be 31 by the time they received their doctorate, assuming they had completed a period of conscription or alternative national service. This was "absolutely crazy", Professor Turner claimed.

"We train economists as if they

were all going to be government ministers," he added.

There simply were not enough jobs for graduates, and nor would there be in the future. German graduates, unlike the Japanese for instance, were not prepared to turn to something else, he said.

Professor Turner regarded the British system as a model worth copying: 12 years' schooling, three years' university studies, plus a further three years' postgraduate work "for the relatively small number of students who clear the first hurdle particularly well".

He called for a tougher *Abitur* examination, and expressed approval of moves to make university education more elitist. However, he added, that could not be done by bringing in new legislation. If that happened parents would be up in arms and the politicians would knock under to the protests.

The number of students enrolled at German universities in the winter term 1982/83 was more than 1.2 million, an increase of 7.3 per cent on

the previous year. There has been a slight fall in the proportion of women students - from 41.6 per cent to 40.4 per cent.

The new vice-chancellor of Heidelberg University, Professor Gisbert Zupititz, who takes up his duties on October 1, believes that the universities must be given the right to select their own students. In addition to the normal enrolment criteria - possession of the *Abitur* or equivalent qualifications - there should be an interview to test the candidates' aptitude.

This practice would replace the existing centralized allocation of places. One of the likely benefits, said Professor Zupititz, was that student intake would be less regionalized. Students at Bonn University, for instance, would no longer be drawn mainly from the state of North Rhine-Westphalia.

"I think it's important that students should get away from their home surroundings," he said. "This would promote independence."

Feepayers get priority over highfliers

from D. B. Udalgama

COLOMBO

The vice-chancellor of Colombo University, Professor Stanley Wijesundera, has conceded that many students of higher calibre than those admitted are left outside the university system.

He was discussing undergraduate protest against the admission of fee-paying external students to the law faculty and of students from the Kotelawala Defence Academy to certain university courses.

Professor Wijesundera said that for economic reasons the university system could absorb only a small proportion of those who qualified for places each year.

The University of Colombo thought it was important to extend its external service. In this spirit it had recently developed a number of courses at certificate, diploma, undergraduate and postgraduate levels. Students registered for the external law degrees had constantly asked the university for some assistance and the new courses were designed to help them.

Professor Wijesundera deplored the fees charged to these students and said the university could not commit itself to a financial drain which would curtail internal activities. It was also the only way of ensuring that only seriously committed people registered.

Professor Wijesundera defended the fees charged to these students help train students from the Kotelawala Defence Academy in the first few years until facilities were ready at the KDA campus.

He said: "The views and aspirations of the student are certainly factors to be taken into account through the spectrum of decisions relating to the administration of the universities."

"However, such tactics as those resorted to in the University of Colombo recently are merely instruments for the small body of persons who have no faith in discussion and consultation as means to the solution of problems."

Students with a university degree or diploma from their own country will be now able to pursue higher studies or research or practice a profession in an Asian or Pacific Country.

Australian winner

An Australian professor has won one of the world's most esteemed research awards for work which has furthered understanding of what makes people susceptible to influenza or cancer.

Professor Peter Doherty, head of the department of experimental pathology at the Australian National University, received the Paul Ehrlich and Ludwig Darmstadter Prize.

Poles clamp down on student activities

by a Special Correspondent

Western "centres of subversion" are trying to turn Polish universities into "extra territorial enclaves" for anti-state activities, two top Communist Party officials Waldemar Swirgon and Leszek Miller, who have special responsibility for youth affairs, told a foreign press conference recently.

Polish student activities remained "independent", according to the officials. But there could be no question of reviving the banned Independent Students Association (NZS), and all student activities must now come firmly within the framework of the party.

The NZS, had been "manipulated by the political underground", they claimed. The catholic youth organization Oasis would also be prevented from creating its own organizational structures outside religious.

Oasis aims primarily to aid spiritual renewal among students and young people, and it is difficult to see what the party considers "extra religious" in its activities. The party may object to its summer camps and sun festivals, which offer young people a popular alternative to party-sponsored vacation activities.

Certainly the party seems to be taking a special interest in student vacations. A "broad exchange of

with other socialist countries is planned for this summer with around 100,000 young Poles going to East Germany. The CDR is not normally favoured by Polish tourists but special trips are being arranged probably as part of the celebrations marking the centenary of the death of Karl Marx.

Communist Party concern with student affairs formed the main topic of a recent meeting of secretaries of College Party committees, which stressed that constant and militant action by the party was needed to stabilize the situation in higher education.

Part of the instability to which this meeting tacitly referred was undoubtedly seasonal. The 1968 purge of the universities began in March and in spite of the official ban on protest commemorative meetings were attempted this year in several universities.

The forthcoming trial of the five intellectual advisers to Solidarity, all of whom were formerly closely associated with the Flying University and underground press movements, could also serve to provoke an atmosphere of excitement in the universities. The official media has presented the five advisers as a "serious threat" to the socialist system,

French medics drop apathy to protest against new exam

from Guy Neave

PARIS

French medical students were unexpectedly militant when they protested against the introduction of a new exam at the end of fourth year studies.

Demonstrations in Paris reached a climax when they occupied the offices of M. Jack Rallite, the secretary of state for health.

Trouble had been brewing for some time ever since proposals for reforming pre-internship examinations were announced last December.

Medical students are not known for their militancy, and they were not alone. Another issue dealing with conditions of employment and job security for interns and heads of clinics brought out the junior ranks of doctors as well. The strike called by junior doctors was widely supported and brought out 85 per cent in the Paris hospitals.

The student demonstration, which took place on the same day, was organized under the code-name of "Operation Tetanus" and was more spectacular. Negotiations between protesters and officials began after a six-hour sit-in at the minister's office had ended when riot police were called in.

Similar demonstrations took place in Lille, Caen and Montpellier.

The government had plenty of notice of the strength of feeling among French medical students. The movement has taken a long time to build up, and it went to considerable lengths to organize a referendum throughout the country earlier this month. The majority came out firmly in favour of rejecting the reform rather than considering the government's offer to consider modifying it.

The main student grievance is the fact that the new competitive examination may well cut back the numbers admitted to both general practitioner and specialist training.

Vain attempts have been made to contact deputies on both sides of the national assembly to put the students' case. The situation is not made any easier by the apparent failure of the ministry of national education and the ministry for health to coordinate medical education.

In the aftermath of the protests there are signs that while neither ministry is prepared to do away with the new examination, they are prepared to change some details. Unfortunately most medical students do not want this.



The Prime Minister of Malaysia, Dr Mahathir B. Mohamad, watched his son Mirzan receive his BSc in computer science from Brighton Polytechnic. He was at the degree ceremony in a private capacity, but met Mrs Thatcher before returning to Malaysia.

Maori university to confer own degrees

from Lindsay Wright

WELLINGTON

New Zealand's first private university, Te Wananga o Raukawa, is planning to hold its first graduation ceremony at the end of next year when its first graduate will receive a degree in Maori and administration.

The established universities have always held a monopoly on the conferring of degrees but it appears that under New Zealand law there are no barriers to the new institution's plans and the government has not reacted against it.

Professor Whatarangi Winata, professor of accountancy at Victoria University, who is a former dean of Te Wananga, is now able to pursue higher studies or research or practice a profession in an Asian or Pacific Country.

The first two students enrolled in 1981 and eight more last year, in this what may be the most ambitious venture yet by the energetic Raukawa Trustees, a group of nearly 70 Maori leaders representing the confederation of a group of three Maori (tribes) from the south of North Island - Te Ahi Awa, Ngati Raukawa

and Ngati Toarangatira.

The confederation opened a church in Otaki in 1849, established its own horse racing club in the 1880s and early this century the Otaki Maori Boys' College was built on land donated by the confederation. The college, which closed in 1938, taught international singer Inia Te Wata and its old hostel is now being restored for the new university.

When fully restored the building will provide accommodation in a meeting-house for 40, a seminar room, a dining room, seating 100, administration offices, lecture rooms, computer rooms and an archives section.

Professor Winata said they aimed to build Te Wananga up to 60 students, with 20 enrolments a year in the three-year degree programme.

Students from other iwi would be welcome, but the emphasis in the Maori section of the curriculum would be on the oral literature, history, arts, protocol, genealogies and current social issues of the three sponsoring tribes.

The administrative studies section covers management and includes studies of 11 different types of organiza-

tions from industrial firms, state corporations, Maori incorporations and charitable bodies to the one overseas, Japan.

The university's 1983 calendar explains: "The choice of Japan, for a country case-study reflects a belief that Maori people have a comparative advantage in the study of this subject. It indicates a confidence in the country as a valuable source of technology to enhance the industrial development of the region spanned by the confederation."

The university grew from a 25-year experiment in tribal development launched in 1975 by the Raukawa Trust. Known as Whakatupuranga Rua Mano (Generation 2,000), it aims to boost the education of young people in the confederation.

The trustees already have a \$1.75m educational trust which provides scholarships valued at \$50,000 for more than 200 children in the confederation.

Te Wananga o Raukawa will do its own fund-raising and the trustees will try to raise over \$600,000 for buildings and facilities and an estimated \$360,000 a year for running costs.

University for women rejected

from A. S. Abraham

BOMBAY The University Grants Commission has turned down a proposal from the government of Andhra Pradesh state in South India to set up a women's university.

The UGC says that a university founded exclusively for one sex would violate the basic concept of university education as an opportunity for all sections of people, irrespective of sex, religion, caste or language, to mix together and promote "national integration". Single-sex schools are in order, says the UGC, but not universities.

There is only one women's university in India, the SNDT (Shri Mata Jyoti Bai Dadasaheb Thakkersey) in Bombay. But there are many women's colleges affiliated to universities, like Sadya College in Bombay, and Lady Sri Ram College in New Delhi.

Since there has been no law requiring provincial governments to consult the federal government or win approval in order to start a university, the Andhra government can still go ahead. But it will not get a UGC grant.

John O'Leary continues the series on alternative funding with a look at two of Britain's private university establishments

Buckingham unbound

One small institution tucked away in the Home Counties has become synonymous with private higher education, as well as being probably the most controversial post-school establishment in the country. With a little help from some wealthy friends and, latterly, a sympathetic government, the University of Buckingham has weathered the recession and achieved official academic legitimacy. Yet still there is no shortage of critics of the college and particularly of the decision to grant it a Royal Charter which it received last week.

Buckingham has been accused of elitism, of lowering standards through its persistence with two-year degrees, and of hypocrisy in seeking state support for its students while professing independence. But it is the issue of the charter which has rekindled old enemies, provoking accusations of political bias on the part of Sir Keith Joseph, Secretary of State for Education and Science, whose recommendation brought agreement from the Privy Council.

Old arguments about standards dating back to ill-fated negotiations with the Council for National Academic Awards a decade ago have been reopened and Labour spokesmen have threatened to review both the charter and the students' grants if returned to power.

None of this seems to concern the staff at Buckingham, who long ago learned to ignore most criticism and who display an infectious enthusiasm for the university. Not unnaturally, it is a change which is seen as the final triumph for a brave initiative. Although few of the staff have been at Buckingham from the start, all identify closely with the university and have been prepared to do more than their normal work to promote its cause.

Inevitably, given the strong feelings which private institutions inspire, there is not the same variety of personality which is to be found in the average senior common room. There is little reason to question the academic quality of the staff, who are encouraged to maintain their research through the right to one term's sabbatical in four. The university keeps a publications list which would not be out of place in another university. Although there is no such thing as tenure at Buckingham —

lecturing staff are on five-year contracts — recruitment has never been a problem since salaries are higher than in the state sector.

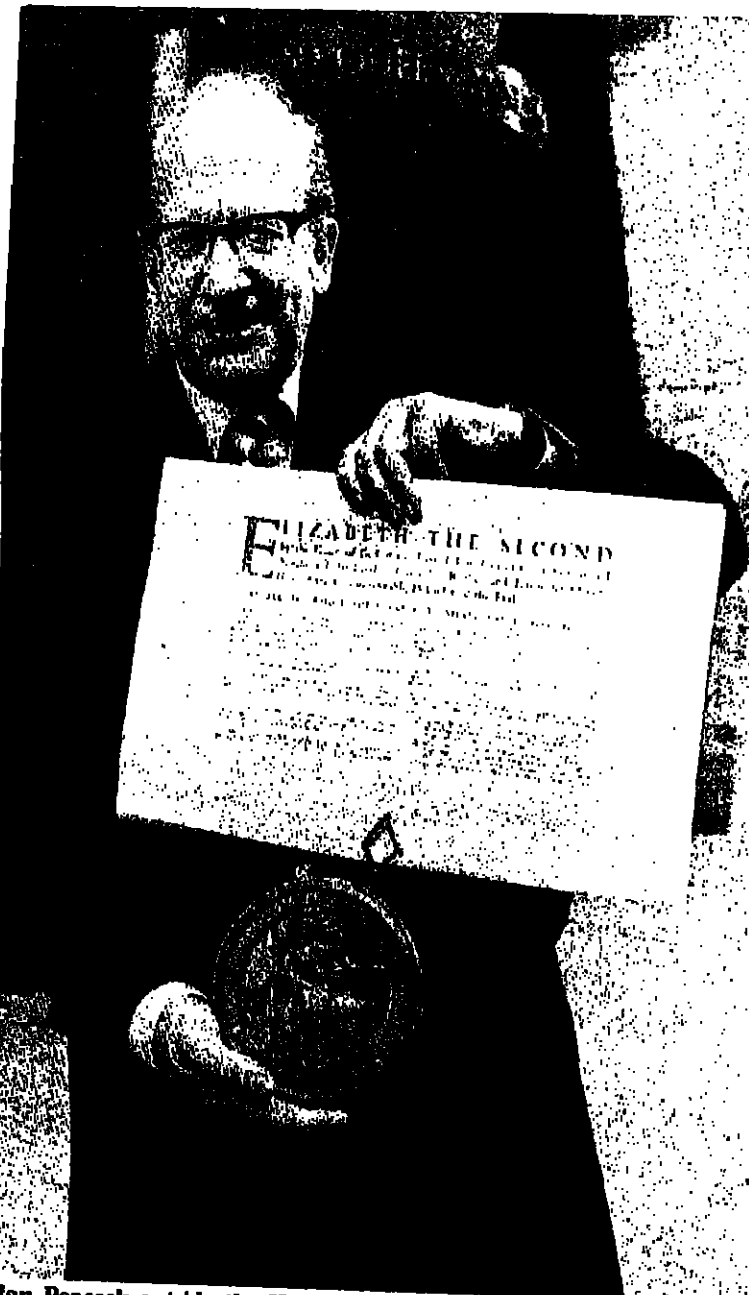
Staff/student ratios are somewhat less favourable than elsewhere, but there is compensation in the tutorial system, which is heavily stressed by the college. Overall, the ratio now stands at 1:10 but the term's study leave brings the actual figure up to 1:13. The disparity with the state sector is not a cause for concern at the university since one of the areas of experiment from the start has been the teaching of high-grade courses in larger groups.

Buckingham is more cagey about the quality of its student applicants, professing a convenient scepticism about the value of A-level grades as an indicator of ability. Although there were six applicants per place last year, it is admitted that the grades offered would not stand comparison with the leading universities. The proportion of home students has risen from about a quarter at its lowest point thanks to the award of mandatory grants in 1980, but it still stands at only 39 per cent. With tuition fees standing at £3,600 per year, the grants still cover only about a third of a student's costs.

The majority are mature students, many of whom are attracted by a two-year degree as a shorter period out of the employment market. As Professor Alan Peacock says in a revealing throwaway remark: "They take to the two-year pattern very well. They are not coming to find out the meaning of life or anything like that."

This, together with the academic structure, the narrowness of the range of subjects offered and the sheer smallness of the university, is what causes uneasiness for some in Buckingham's newly elevated status. After all, universities traditionally have concerned themselves with education in the widest sense and have left room for students to ponder "the meaning of life". Buckingham is unashamedly career-orientated and inevitably limited in breadth.

Although students are obliged to take supporting courses in a language and either mathematics or a science, they are given a more rounded education than in some highly specialized institutions; there remain only seven



Alan Peacock outside the Home Office with the Royal Charter which makes him a vice-chancellor and Buckingham a university.

main subject areas. By far the biggest is law, followed by accounting and economics. History, politics and English literature, European studies, and politics, economics and law make up the remaining arts and social sciences, with life sciences the only scientific school. The schools will be reorganized into faculties now the charter has been formally conferred.

Plans to add to the sciences available to Buckingham students through an arrangement with the Polytechnic

for instance," he says. "We might come to a federal arrangement with them."

For the moment, however, the subject mix and the size of the institution, which still has only 470 students despite constant expansion over seven years, make Buckingham much more reminiscent of one of the smaller colleges of higher education than a university. Financial considerations have dictated modest growth, although the college considers this a virtue since it has retained the personal atmosphere of a small unit.

Professor Peacock vigorously denies that Buckingham's size is a barrier to university status, however. "In my undergraduate days at St Andrews, there were no more students than there are here," he says. "Why not have some large and some small universities? I do not think there is an optimal size for a university."

Criticism of the award of a charter is plainly a source of considerable annoyance because he feels that Buckingham's qualities and the tests they have undergone are misrepresented. In particular, he resents the refusal of most critics to come and see for themselves. "I invited Neil Kinnock but he never even replied," says Professor Peacock. "Not one of the organizations which made submissions to the Privy Council asked us for any information and, as a result, some were factually incorrect."

Nevertheless, the final step to academic respectability does appear to have been fairly painless. Unlike the CNA, which refused to validate Buckingham's two-year courses in 1974, the Department of Education and Science did not conduct an inspection of the college. It relied instead on the copious documentation supplied by it and recommendations from previous exercises, in particular a thorough inspection by the Civil Service Commission when it agreed to accept Buckingham licences as currency for its graduate intake.

Professor Peacock says, quite reasonably, that the procedure was not his business and that Buckingham's quality was well established before the application for a charter was made. Other universities had accepted Buckingham students for postgraduate degrees and both the legal and accountancy professions recognized the licences as degree equivalents. "I think that if we were subject to close scrutiny by whatever government was in power we would come out of it with flying colours," he insists.

Certainly, there is no disputing Buckingham's right to pass the second of the Privy Council's tests: that of financial stability. Ever since Lord Tanlaw's £1m gift enabled the college to be established, Buckingham's ability to raise money and progress towards security has been unquestioned. More than £4m has been contributed to the appeal fund in a decade and in the last two years an operating deficit of £300,000 has been turned into a modest surplus.

It has allowed the university to add to its student residences and to convert an attractive old mill on the main site into a social centre, giving students and staff facilities on a par with public sector institutions for the first time. Further building is expected to enable the new university to expand to 600 students to complete its development plan.

The charter is already paying off in terms of student applications, which have doubled in the short period since the announcement. Professor Peacock hopes that it will also provide "an important argument" for those distributing research funds, as well as to foreign governments seeking to place their best students abroad.

Postgraduate degrees, which have started in a small way, are to be the next area of academic expansion. Although the resources are not available to offer taught master's degrees, Professor Peacock is keen to increase the number of higher degrees by dissertation. It is another example of Buckingham's determination to extend the boundaries of the private sector and confound the critics. In its own terms, the institution is already an undoubted success; whether the merits university status is another matter.

Olga Wojtas describes the unique role of Scotland's central institutions

It is now 13 months since the Council for Tertiary Education in Scotland produced its review of structure and management, which proposed that all colleges dealing with advanced further education should become Central Institutions. There are at last hints that the Secretary of State for Scotland may be about to implement the council's majority proposals.

Since Central Institutions are peculiar to Scotland, it is understandable that the term means little south of the border. But in Scotland itself, only educationists in the tertiary sector are likely to understand what the Scottish Secretary is intending to do with advanced further education, despite the fact that four colleges were first designated Central Institutions in 1901.

The 14 CIs are a disparate group, with specialisms in technology, nautical studies, textiles, art and agriculture, and it is perhaps because of this that many people do not realize they form a single sector of Scottish tertiary education.

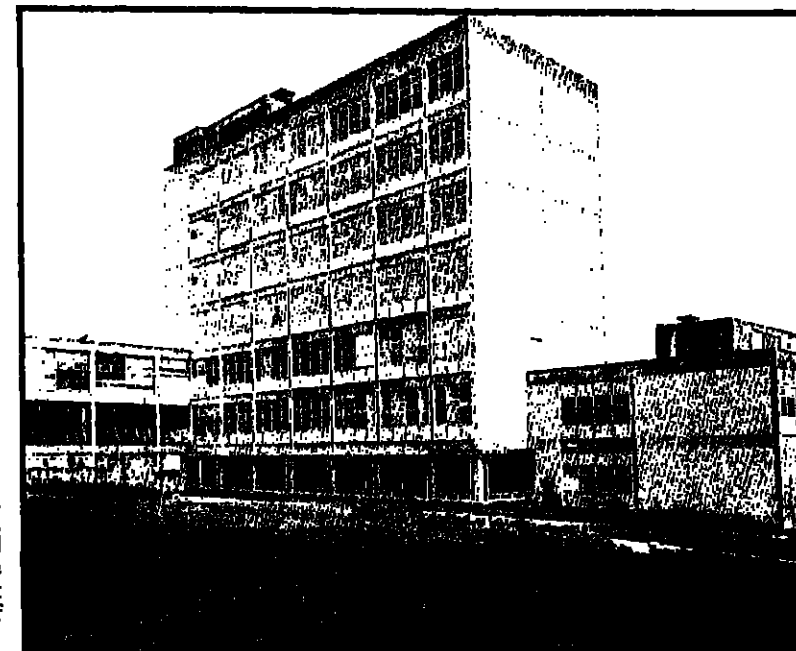
The first four "industrial universities" to receive special grants to further their technical instruction have been joined by another 12, although two of the original four, the Glasgow and West of Scotland Technical College, and Heriot-Watt College, became Strathclyde and Heriot-Watt universities during the expansion of the 1960s.

The three agricultural colleges, although designated CIs, do not come into the main body of the group, since they are separately run and funded by the Department of Agriculture and Fisheries (Scotland). As well as providing agricultural education, these colleges run comprehensive advisory services for commercial agriculture and horticulture.

The 11 others can be likened to the polytechnics in England and Wales (although they are largely monotechnic, with the exception of the three technological CIs which have assimilated non-technological courses), but with one crucial difference.

They are centrally funded by the Scottish Education Department, which determines both student and staff numbers. They are phlegmatic about their student quota systems, monitored carefully by the SED to meet the national needs of industry and commerce, and have little sympathy with the universities' present complaints about quotas.

There are about 13,000 full-time and 20,000 part-time vocational students in the CIs, which last year had a budget of some £40m.



Paisley College: Industrial liaison. Peter Clarke (above) and Tom Howie: not seeking university charters.

The happy minority

Each central institution is managed by an independent board of governors, with representatives from industry, commerce, and professional and educational organizations. The governing bodies establish academic councils which are responsible for the colleges' academic planning and development.

The most striking aspect of the CIs is that at a time of general educational misery, they are more than contented with their situation.

It is not surprising that the tertiary council took the CIs as a model for the future, since every submission they made emphasized that they were not prepared to change their brand of washing powder for two packets of any other.

The Italian-sounding Copadoci, the Committee of Principals and Directors of Central Institutions, insisted that the CIs operated extremely well, were highly cost-effective, and enjoyed an excellent relationship with the SED.

Dr Peter Clarke, principal of the CI flagship, Robert Gordon's Institute of Technology in Aberdeen, and an Englishman who has worked in the public sector south of the border,

commented: "The Scots don't know they're born. It's people of ethnic minorities like me who appreciate the central funding system. It may not be more generous, but it's a good deal less capricious than local authority funding."

Another senior academic put it more bluntly: "I'd much rather deal with career civil servants: they're more amenable to reasoned argument than politicians."

"We're all equal here. In England, money is poured into some polytechnics while others are run on a shoestring. And we have far more flexibility than the polys have. We are responsible for building, alterations, finance, personnel," he added.

The tertiary council's minority report, which has attracted considerable support, proposes that all colleges should come under local authority control, but this has been utterly rejected by the Copadoci. The CIs are responding to an overall, national need, and therefore must be centrally funded, it argues.

It is unconcerned by the fate of the other centrally-controlled Scottish sector, the colleges of education, which two years ago were cut by the

Scottish Office from ten to seven.

The colleges of education were doomed, they say, because they were monotechnic and did not diversify as the English colleges did.

The CIs claim there is no duplication in their system, and are proud of their capacity for innovation. For example, the Queen's College in Glasgow bears little resemblance to its original "do school" (domestic science college) status. It has recently begun the only three-year physiotherapy degree in the United Kingdom.

Paisley College, a major technological institution, has set up a centre for liaison with industry and commerce, which runs a programme of advanced continuing education with interdisciplinary courses for engineers, scientists, technologists, and managers.

The CIs see their vocational orientation as one of their strongest features. Several courses lead to membership of professional institutions in, for example, architecture, engineering, physics, textiles and biology. The colleges run many sandwich courses for trainees sponsored by companies and for students who

BRIEFING

are helped to find industrial places.

But the CIs are concerned that this emphasis is not seen as a limitation. Dr Geoffrey Richardson, principal of the Queen's College, said: "There is a view that students who do vocational courses are only suited to that profession. But their skills are transferable. Employers need their eyes opened to what these young people can offer, and should be able to employ a technician as a graduate, just like a history graduate."

Dr Clarke agreed: "Our students get a good deal more of a liberal education than many university arts students who are very specialized."

The CIs have not been free of academic drift. Part-time students and lower-level courses have been steadily replaced by full-time students and degree courses, the majority of which are validated by the Council for National Academic Awards, although some degrees are validated by the local university.

The larger CIs in particular feel they have to some extent outgrown the CNA and hope eventually to become self-validating. But they are not anxious to follow the lead of their former sister colleges, now the universities of Strathclyde and Heriot-Watt.

Paisley College was widely tipped to become Scotland's ninth university, but principal Tom Howie, chairman of the Copadoci, does not regret the absence of a university charter. The college's status would have been enhanced, but it would not have had the substantial investment put in it by the SED over the past five years, he maintains.

The subject of university status has again arisen within the past month, with Aberdeen University court's proposal of a merger with Robert Gordon's. But Peter Clarke pointed out the differences in outlook between universities and the CIs. "In CIs, teaching always comes first, with research and consultancy very much a second priority," he said.

"Our reason for not seeking university status ourselves, and not rushing into the arms of the university, is that we would come under the University Grants Committee. All our courses are status courses, and the UGC encourages the non-vocational. We run courses at a variety of levels, and the UGC wouldn't want to know about that," he added indignantly. "And we'd rather be number one with the Scottish Office than number 77 under the UGC."

LEITH NAUTICAL COLLEGE, EDINBURGH

Has 750 students. It is recognized by the Department of Trade as a navigation, radar, and marine engineering school, and by the Home Office as a radio communication school. It is wholly devoted to marine, offshore and related studies, and is fully residential. Courses include navigation, marine engineering, marine electronics and electrical engineering, and instrumentation and control for offshore industry.

THE WEST OF SCOTLAND AGRICULTURE COLLEGE, Ayr

Has 431 students. It was founded in Glasgow at the end of last century, and moved entirely to Ayr 10 years ago. Its courses include agriculture, agricultural engineering, dairy technology, horticulture and beekeeping, poultry husbandry, botany, microbiology, zoology and plant pathology.

THE EAST OF SCOTLAND COLLEGE OF AGRICULTURE, EDINBURGH

Has 165 students. It forms the Edinburgh School of Agriculture with Edinburgh University's department of agriculture. Courses include agriculture, crop production science, animal production science, agricultural economics, crop protection, veterinary studies and microbiology.

THE NORTH OF SCOTLAND COLLEGE OF AGRICULTURE, ABERDEEN

Has 154 students. It forms the Aberdeen School of Agriculture, with Aberdeen University's department of agriculture. Courses include bacteriology, chemistry, animal husbandry, veterinary hygiene, zoology, crop husbandry, botany, economics, engineering, grassland husbandry, farm buildings, horticulture and poultry husbandry.

ROYAL SCOTTISH ACADEMY OF MUSIC AND DRAMA, GLASGOW

Has 410 students and is one of the four royal colleges in Britain. It has a school of drama and school of music with courses for both intending teachers and performers. Its degrees in musical performance, musical education and dramatic studies are all validated by Glasgow University with which the academy has close links. The academy validates diplomas in musical performance and in dramatic arts.

San Diego's home from home in Hertfordshire

Buckingham is by no means the only, nor even the biggest, private university campus in Britain. At least half a dozen American institutions, half of them universities, are offering degrees on associated campuses in England.

By far the largest is the International University of Europe, part of the American university of the same name based in San Diego, California. The campus opened in 1978 in the former Masport School, at Bushey, Hertfordshire. Its proximity to London and the impressive architecture on a 95-acre site soon encouraged growth from an initial intake of some 100 students and now more than 800 are enrolled on a range of undergraduate and postgraduate courses.

By next year, it is expected that the university will be twice Buckingham's size, with nearly 1,000 students, a third of them postgraduates. Although students in San Diego and on the university's other campuses, in Mexico City and Nairobi, are given the option of a period of study in Britain, relatively few actually come to Bushey. The large majority of the student population is from "developing countries, notably Malaysia and Nigeria. They are offered a choice of four bachelor's degrees in human behaviour, international relations, engineering or business administration. Each course contains at least 180 units of study, taken from the San Diego curriculum with minor modifications where necessary, which must be completed in four years but can be managed in three thanks to a flexible academic year.

Compulsory "core courses" designed to ensure "vital knowledge and familiarity with the most important writings and philosophies of the world" are taken by all students, as are a minimum of 15 units in English. Like Buckingham, those for whom English is a foreign language are tested for fluency before beginning their studies. The emphasis is on human behaviour, which is the speciality of the home university, and which attracts by far the largest numbers of students.



The International University — Europe campus, formerly the Masport School, at Bushey.

Such a balance follows the philosophy of the International University, as outlined by its president, Dr William Ruge. "The mission is to bring what can bring mankind together, not merely to accustom people to living with discord," he writes in the prospectus. "International University Europe bases its educational philosophy on the search for common values that transcend cultural differences."

Fees now stand at £795 per quarter, with most students taking three quarters per year rather than the four on offer to those wishing to make more rapid progress. After the early loss-making years, the campus is now roughly self-supporting financially although reliant on San Diego for administrative services. Eventually, the university hopes to take more

than 2,000 students at Bushey in addition to the 150 pupils at the high school also housed on campus. Dr David Bennett, the campus director, a veteran of 15 years' service in a number of American institutions in Britain, considers 1,500 to be the first important target both for financial stability and a viable academic community.

Although the university is registered in an entity, for grants, it hopes to encourage more American students to cross the Atlantic. Traffic is more common in the extended stay in San Diego. The three postgraduate programmes in management and organizational development, business management, and business administration are likely to be the main

ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN

Largest of all the institutions, with 3,500 students. It has three faculties, arts, science and technology, and incorporates Gray's School of Art and the Scott Sutherland School of Architecture. It is regarded as a world leader with its offshore survival centre, and has just established a centre for offshore health. Its courses include electronic and electrical engineering, mechanical and offshore engineering, physics, chemistry, pharmacy, mathematics, business management studies, hotel and institutional administration, librarianship, home economics, nutritional science, health visiting, social work, art, architecture and surveying.

EDINBURGH COLLEGE OF ART

Has 980 students. It has five schools, architecture, town and country planning, drawing and painting, sculpture, design and crafts. The schools of architecture and town and country planning are recognized as departments of Heriot-Watt University, but are funded entirely through the Scottish Education Department, with Heriot-Watt retaining a percentage of fee income.

PAISLEY COLLEGE OF TECHNOLOGY

Has 2,860 students. It has schools of engineering, science, and social, planning and management sciences, and is noted for its centre for alcohol studies. The Scottish school of non-destructive testing, and its microelectronics educational development centre, is currently setting up a microsystems centre and small business centre. Courses include civil engineering, mechanical and industrial engineering, electrical and electronic engineering, mathematics and computing, physics, chemistry, biology, land economics, economics and management, and social studies.

DUNDEE COLLEGE OF TECHNOLOGY

Has 1,900 students. It has three faculties, science, engineering and construction, and management and

social studies. Courses include mechanical and industrial engineering, electrical and electronic engineering, civil engineering, surveying and building, business studies, accountancy and economics, mathematics and computer studies, physics, molecular and life sciences, and textile science.

GLASGOW SCHOOL OF ART

Has 980 students. It is one of the oldest colleges in the country, founded in 1840. Its department of architecture and Glasgow University's department of architecture form the Mackintosh School of Architecture, with degrees validated by the university. Degrees in planning, currently validated by the CNA, are shortly to be validated by the university. The college also has courses in fine art, and design.

DUNCAN OF JORDANSTONE COLLEGE OF ART, DUNDEE

Has 990 students. It became a separate institution in 1975, having previously formed the Dundee Institute of Art and Technology with the present Dundee College of Technology. It has links with Dundee University in

architecture, and town and regional planning, with the university validating these degrees. Its other degrees are validated by the CNA. Its courses include architecture, town and regional planning, drawing and painting, design, sculpture, printing, home economics, catering and hotel keeping.

GRAY'S SCHOOL OF ART, ABERDEEN

Is part of Robert Gordon's Institute of Technology, and has 290 students. It has two departments, design and craft, and fine art. RGIT also includes the Scott Sutherland School of Architecture which has 200 students. It jointly coordinates an MSc in rural regional resources planning with Aberdeen University, which validates the degree. Its architecture degree is validated by the CNA.

QUEEN MARGARET COLLEGE, EDINBURGH

Formerly the Edinburgh College of Domestic Science, founded in 1875, it has 1,075 students. Courses include nursing, clinical teaching, health visiting, dietetics, physiotherapy, occupational therapy, speech therapy, social work, drama, home economics, institutional management and communication studies. The college houses the Centre for Consumer Education and Research in Scotland, and the Scottish Council for the Tiltation of the Disabled.

THE QUEEN'S COLLEGE, GLASGOW

Formerly the Glasgow and West of Scotland College of Domestic Science, founded in 1875, it has 800 stu-

University managers are faced with multiple external sources of pressure and with internal complexity and fragmentation, both of which combine to make them frequently doubt whether there is an institution. It exists in the charter but a primary challenge to managers at that level is that, internal and external parties tend to ignore that existence except when they need to make use of it or blame it. For example, Westminster, Whitehall, inter-university bodies, and internal committees all explicitly refer to (and sometimes build into regulations) the autonomy of students' unions, and treat those unions as autonomous in transactions; yet those unions are constitutionally and financially integral parts of the institution. A further example is that the University Grants Committee, in its work leading up to the key July 1981 letter, based the critical planning decisions on the national distribution of subject groupings; institutions became no more than the addition of the results of those decisions on subjects.

The challenges now posed by the external environment can be summarized briefly under four headings. First, the reduction in resources and more specific instructions about how they must be used. The challenges to provide value for money, to reduce unit costs, to be less labour-intensive, to maximize the use of capital facilities, to improve methods of accountability, should need no elaboration. "New blood" is just another example of this new specificity.

Second, there is the challenge to be efficient in ways other than resource allocation such as the maintenance of quality, awareness of production times, greater attention to the planned use of academic staff time, increased use of technology, better evaluation of teaching methods, and the maintenance of institutional vitality.

Third, is the challenge of the market; the need to remain attractive in traditional markets and to penetrate new markets. Each of the markets in which the university operates (student demand, research funding, services to industry and commerce, private fund-raising, and so on) is changing and provides challenges. The overseas student market has provided one example in recent years of both the change and the response. Fourth, the challenge of living with uncertainty and being more responsive to external needs; adjusting to change rather than being adjusted by change.

A primary area of response is that of attempting to increase both internal and external understanding of the situation I have described. Despite the limits of management described each week it needs to be recognized that universities are organizations which have corporate responsibilities, and which possess powers to manage the activities of those responsibilities. Members of the academic staff collectively constitute the major element in the government of a university, but individually they are employees by contract. Members of academic staff may be influenced by, and give their prime loyalty to, the national and sometimes international professional groups which cut across all universities; but, in terms of organization and management, the existence of the university creates a firm boundary. Faculties, colleges, departments and other units are not autonomous units within a guild structure; they are interdependent parts of a unitary organization. Legally, the framework for management exists.

While the existence of management needs to be better recognized within the university, the limits of management, stemming from the basic purposes of the university, must be better recognized outside. It was refreshing that the chairman of the UGC, in his interim appraisal of restructuring, stated to the Secretary of State in December 1982 that "universities are self-regulating communities of scholars and all academic staff are members of the body corporate. The decision-making process is complex and depends on widespread consent. Even under the urgent pressure of reduced funding, a realignment of academic priorities is not easy to achieve without considerable debate over a fairly long period". A month later, the UGC gave the universities a month to submit not generalized bids but detailed

Managing for change

The Times Higher Education Supplement

July 3, 1981

UGC protects the chosen few

Ten of the 48 universities have been protected by the University Grants Committee's selective strategy for the 1980s from the full rigour of the cuts in public expenditure.

A 10 per cent watering of the unit of resource recurrent grant and indications of the level of grant for the following two years were announced by Mr Mark Carleton, the Secretary of State for Education.

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Geoffrey Lockwood discusses how universities can adapt their management to changing circumstances of the 1980s

proposals for individual "new blood" and "information technology" posts in priority order.

One of the key areas of response is the political. Historically, senior university officers were very politically active, albeit in the "corridors" and the "clubs" rather than public arenas; it could now be argued that the universities have not adapted to those changes. At heart, the British universities have got most things right even in the 1970s (institutional scale, balance of basic objectives, attention to quality, speed of undergraduate throughput, professional responsibility and participation, research discoveries etc). Their response to economies in the 1980s has been heavily on the credit side of the political balance. In a sense, those universities have been let down by the very institutional management whose case is being put forward here. If the universities have not got it right, that message has not got across to or been accepted by the external world. Institutions, such as universities, require political allies, (not party politically) and insufficient attention has been paid by management to the formation of such alliances.

A particular aspect of this political dimension has been the failure to judge when the individual university should respond and when the response should be collective. The complex practice of autonomy applies to the individual institution not the system. Clearly, institutions as different as Sussex, Leeds, Salford, Edinburgh or Cambridge need sometimes to deal collectively with external bodies, but equally clearly their differences need sometimes to be reflected in different responses.

For example, much has been made of the response of universities to Mrs Shirley Williams's famous 13 points of 1969; the alleged unconstructive nature of that response is seen as having led Whitehall and Westminster to giving lower priority to the universities and higher priority to more education. That argument overlooks the fact that the 13 points were wrongly put; universities in 1969/70 were characterized by the organizational features described above, were used to responding to ideas and guidelines through a formal planning process (the quinquennial system) and their members had lived through nearly 15 years of expansion; it was politically unreasonable to expect any response to such a series of set-piece ideas (rather than a clear but tentative planning framework) other than the one received.

It was an occasion when the response should not have been collective. All associations tend to be protectionist and to function on the basis of the lowest common denominator. Frequently it is necessary or desirable for individual responses to be submitted through such a mechanism; frequently it is more desirable that the imagination and individuality of response should not be so filtered, especially in a system consisting of autonomous institutions. Fortunately, there are signs that the wrongly-perceived discrimination on institutional grounds of 1981 by the UGC has rightly led to a growth in recognition of the need for that care at the institutional level (the alleged protection of collectivism has been dis-

pelled).

A second key area of response is adjustment to the internal structures of governance and management. Apart from increasing the internal understanding of the role of management, the adjustments should be towards reducing the resistances referred to above (but not removing or ignoring them), investing greater influence in the university with proven track records, and increasing the clarity of organizational structures (building upon the basic production units).

In terms of committee structures, although there remains benefit in the dynamic division of authority between a council and a senate the remainder of the structure ought generally to be reformed into a single hierarchical structure; the number of committees and tiers should be reduced in order to create shorter chains of decision-making; most committee compositions should be smaller, with longer terms of membership, while safeguarding participation at the base level and in one representative "arena" body at the institutional level; there should be greater selectivity of business and more devolution of responsibility to the basic unit and to institutional officers; committees should function year round in order to increase the speed of responsiveness.

In terms of the officer structure at the university, faculty and departmental levels, much greater care should be taken over the selection of officers, whose rewards, responsibilities and accountability all need to be increased. There is scope for the electoral process, "Buggins's turn next", appointment from above, appointment through consensus, but each choice should be made carefully in each individual case. There must be a combination of lay and academic, of experience and vigour, of conservative and radical and so on, but all subject to a judgment about those balances across the institution. Similarly with the balance between two, three, five, ten year or even permanent appointments.

A third area of response is that of institutional planning. One of the minute effects of the oil-led inflation crisis of 1973/75 and the subsequent economic recession, was that they wiped out university planning practices and processes both at the quinquennial level (the demise of the quinquennial system) and at the institutional level. Institutional planning must be rehabilitated. It is short-sighted to criticize planning because of the general experience of the 1970s as it would be to blame accountability because it became difficult to balance the books in that period.

Planning was and is unavoidable. Planning always exists in universities though it may not be recognized as such. Few developments occur by accident in universities, in the sense that they are not the result of deliberate decisions, even if not necessarily institutional level decisions. Student intakes in each subject are determined in the light of analysis of demand pressure and supply capacity. Academic staff vacancies arise throughout the year and the issues as to whether to fill the same post with the same type of person, whether to switch the resources to another department or whether to save the money have to be faced. Those, and

many other matters, are thus to some extent being planned. Planning is too often equated with techniques; if techniques are not in use the absence of planning is also assumed; if techniques fail the concept of planning is also assumed to have failed.

Planning exists in universities partly because owing to the nature of their activities they have a greater need for foresight in decision-taking than do most other institutions. The lead times involved in change are longer and the effects of change can take decades to reach society. A decision to introduce a degree requires an assessment of the student demand for several years ahead, and the decisions on its content are conditioned by an assessment of individual and social needs decades ahead. Planning is the continuous and collective exercise of foresight in the integrated process of taking informed decisions affecting the future.

Planning is about an organization possessing the ability to change and the opportunity to change. Planning is not an activity solely concerned with the formulation of long-term plans but is a process which can also be used marginally and regularly adjust the present state without necessarily working towards a fixed plan. Getting the right people together at the right time in a conducive setting with the relevant data in front of them for decision-taking is as much a part of planning as the use of information and analytical tools to produce options.

The external factors are now more favourable to planning (eg lower inflation rates) provided that the form of internal planning is adapted to those factors (eg uncertainty, financial stringency). In general, planning now needs to be less formal (fewer elegant plans being processed through the complex organizational structure), more dependent on the exercise of judgment whilst still relying on the fertile capacity of members to produce ranges of proposals, more flexible and dynamic in order to take advantage of opportunities as they arise (which puts a premium on decentralization), and shorter-term (the emphasis put on the three to four year horizon rather than on either the annual budgetary process or the strategic timescale of at least five years). There is considerable evidence that universities since 1980/81 have been rehabilitating planning, albeit in emergency forms. In most universities small leadership groups have been preparing plans for the three to four year period and sub-committees to a participative process of consultation.

What is now needed is to ground more permanently into the fabric of the institution, to retain the emphasis on the role of leadership, to develop the concerns about individuality and quality, and to keep the process abreast of external change. In particular the sensitive areas of evaluation and audit need to be on the internal agenda. Information is normally collected on admissions, examinations, staff/student ratios, student grants, accommodation, etc, but effectiveness, the external commitment of staff, in other words, the hidden areas into which little light has been thrown tend to be those which may open up questions that threaten the main values protected by staff by making possible assess-

ments of quality of performance. The collection and use of such information and assessments does not require elaborate machinery, but it does require institutional will.

A fourth area of response to the externally-imposed challenges is that of personnel management, though not in the limited professional interpretation of that term (important though that is). Universities are people not only in the economic sense, in terms of quantity and quality and in terms of governance but in their essence. Resource reduction and technological development will continue to lessen the labour intensity of universities but the important events in universities will still take place in the classroom and the laboratory, not in offices and committee rooms, and the main product will remain people.

In this area of response, as with the others, it is a matter of adjustment not revolution. First, to educate the members of the university about the external challenges and the internal nature of the institution. For example, most of those members in their academic and professional work are used to the resistances of the society they are examining, and they justify their authority on the basis of specialism and distance; they too need to accept in their internal environment that there is benefit in the specialism and experience of "managers" and in "distanced" views (eg of lay members). The "ivory tower" cannot examine and change society on the basis of professional competence without also accepting that there are others who will do likewise to the "ivory tower".

Second, since universities are people-dominated then individuals must expect to be judged more carefully and personally than in a production process more heavily reliant on machinery. Both the role of the university in society, and the professional role of the individual within a university, demand a high degree of judgement against a contemporary judgments of a short-term nature which may be based upon bias or prejudice. There is fundamental and continuing validity in the concept of academic freedom, though care needs to be taken as to whether it applies to the institution, the group or the individual. But the hard state of academic freedom needs to be stripped of much of the moss it has gathered over the years. Security of tenure, for example, is needed against the exercise of bias (whether by a head of department or a Secretary of State) but it should not be used to protect the inefficient or to inhibit the institution's ability to remain vital under conditions of financial stringency.

Third, the system of rewards and incentives needs to be strengthened, particularly with regard to risk-taking and industry; security of the individual is too often maximized by the avoidance of decision-taking. Fourth, there is the question of training, in the broadest sense including experience. Leaving aside the major area of training members of the academic staff in teaching and research, personnel management has focused on the training of computer operators, technicians in research laboratories, and so on. What of the training of the main institutional office-holders? Professional university administrators have had the benefit of training programmes for almost two decades but vice-chancellors, pro-vice chancellors, deans, heads of departments, chairmen of key committees, and the like have been neglected to a criminal degree.

In the main, these articles have been concerned with generalities and machinery rather than specifics, but it is hoped that they have illustrated ways of understanding and dealing with the specifics. Whether it be a matter of developing new student markets, relating more to local industry, negotiating with the UGC, etc, it is the attitudes within the university that need to be educated and the institutional framework which needs to be adjusted. The British university is a remarkable well oiled machine, which has performed well over the years under different circumstances, and its capacity to maintain that record is not in question. It is hoped that it will be able to explain itself into those outside and adjust its style to the changes in those worlds.

The author is registrar and secretary of the University of Sussex.

A problem for the world

Viral hepatitis, an acute inflammation of the liver, has emerged as a major public health problem throughout the world. "Epidemic" jaundice was recognized by Hippocrates (460-375 BC) and the early Greek and Roman writers, and the huge epidemics in times of war, referred to as "campaign jaundice", affected not only military strategy and the course of war but also the civilian population.

A second type hepatitis B (or serum hepatitis), was identified at the turn of this century as being mainly transmitted by skin penetration, and having a sporadic nature and longer incubation period. Progress in the understanding of viral hepatitis was slow until 1967-68 when Australia antigen was identified as a specific marker of hepatitis B virus. Hepatitis A virus, the cause of infectious or epidemic jaundice, was recognized in 1973.

Both types of infection are rife in tropical countries, in the developing countries and in some regions of Europe. Hepatitis A and hepatitis B viruses have been characterized and the infectious tests for specific viral antigens and antibodies. More recently a third type of hepatitis referred to as non-A, non-B, which is caused by at least three viruses, has been found in all countries where it has been sought, although precise virological criteria and specific laboratory tests are not yet available.

The exact incidence is not known because of the high proportion of infections without clinical symptoms and infections without jaundice, and because of the way it is monitored and reported. Studies of serums have shown that hepatitis A is occurring less often in industrialized countries particularly in Northern Europe, North America and Australia; but the infection is suffered in most other regions, particularly in countries with warm climates.

The incubation period of hepatitis A is between three and five weeks with an average of 28 days. The virus is spread by the faecal-oral route, usually by person to person contact, and infection is particularly common in conditions of poor sanitation and overcrowding. Outbreaks result most frequently from contamination by excrement of drinking water and food, but it is not often passed on through water in the industrialized countries and where piped water supply has been adequately treated and chlorinated.

On the other hand, many recent outbreaks have been blamed on food. This can be attributed to the shedding of large amounts of virus in the faeces during the incubation period of the illness in infected food-handlers, and the source of the outbreak can often be traced to uncooked food or food that has been handled after cooking.

Such outbreaks have now become important in the study of epidemics in developed countries. Eating raw or inadequately cooked shellfish cultivated in sewage-contaminated tidal or coastal water, and raw vegetables grown in soil fertilized with untreated human excreta is associated with a high risk of infection with hepatitis A virus. Hepatitis A infection is frequently contracted by people who travel from areas where the disease is not prevalent to areas where it is deeply rooted.

All age groups are susceptible. The highest incidence is observed in children of school age, but in North America and in many countries in northern Europe most cases occur in adults, frequently after travel abroad. In many tropical countries the peak of reported infection tends to occur during the rainy season with low incidence in the dry months. A cyclic pattern with peaks every five to ten years have been observed in several countries.

In 1973, small cubic virus particles measuring about 27 nm in diameter (Figure 1) were identified by the technique of immune electron microscopy in faeces obtained during the early acute phase of the illness of experimentally infected adult volunteers in the United States. The availability of the viral antigen resulted in the identification of the specific antibody and the development of serological tests for hepatitis A.

Hepatitis A is a single-stranded RNA virus possessing the features of an enterovirus. Numerous particles are found in faeces during the incubation period of the infection, beginning as early as nine days after exposure, and shedding of the virus continues until peak elevation of abnormal biochemical tests of liver function. Virus particles are also detected during the early acute phase of illness, but the number of particles decreases rapidly after the onset of clinical jaundice. Prolonged virus excretion does not occur and there is no evidence of progression to chronic liver disease. Although the disease is not usually fatal patients may be incapacitated for many weeks.

One type of hepatitis A virus has been identified in volunteers infected experimentally, in patients from different geographical regions, in sporadic cases of hepatitis A and in naturally and experimentally infected apes.

There is considerable evidence, however, that there is an epidemic form of a hepatitis A-like illness particularly in the subtropical of India, Burma, in the eastern Soviet Union and in parts of the Middle East and North Africa. This strain is commonly transmitted by contaminated water. There is ample evidence that this form of hepatitis is not caused by the recognized serotype of hepatitis A, not surprising since this type occurs in regions where most people are infected with hepatitis A in early childhood and are immune.

It is not yet known whether this type of epidemic hepatitis is caused by a virus distinct from hepatitis A, or by a distinct but previously unrecognized serotype or serotypes of hepatitis A. Specific laboratory tests are not available.

Control of hepatitis A is difficult. Since faecal shedding of the virus is at its highest during the incubation period and the introductory phase of the illness, strict isolation is not useful. The spread of infection is reduced by simple hygienic measures and the sanitary disposal of excreta.

A product of normal human blood, prepared from plasma pooled from healthy donors, injected into the muscle before exposure to the virus or early during clinical illness, while not always preventing infection, and the excretion of virus. This treatment has also been used effectively for controlling outbreaks

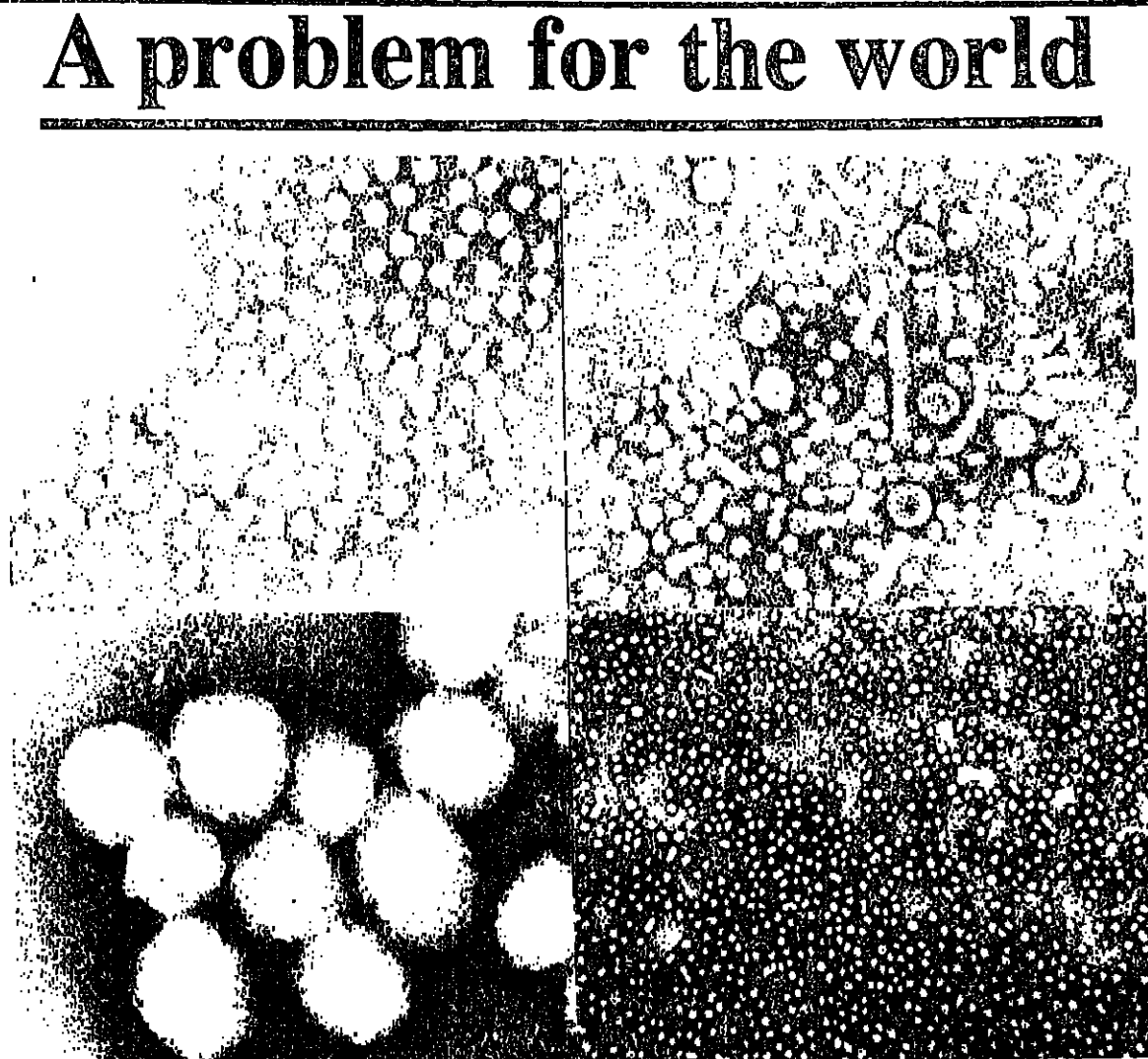


FIGURE 1: Hepatitis A virus particles found in faecal extracts by electron microscopy. Both "full" and a few "empty" particles are present. FIGURE 2: Electron micrograph of serum containing hepatitis B virus after negative staining. FIGURE 3: The 22 nm particle hepatitis B vaccine after purification of the surface antigen from pooled plasma and inactivation with formalin x 80,000. FIGURE 4: The London School of Hygiene and Tropical Medicine hepatitis B polypeptide vaccine in micelle form. Note the large surface area of the micelles.

Arie Zuckerman on the latest research into the treatment of viral hepatitis

in institutions such as homes for the mentally handicapped and in nursery schools. Prophylaxis with immunoglobulin is recommended for persons without hepatitis A antibody visiting highly endemic areas. Effectiveness of immunization is based on the presence of hepatitis A antibody.

The recent successful propagation of hepatitis A virus in cell cultures of primate origin has permitted the development of "killed" and live attenuated hepatitis A vaccines. These vaccines are at present undergoing phase I clinical trials.

The importance of hepatitis B cannot be exaggerated. Apart from the acute illness, which varies in severity, the infection, particularly in children infected at or around the time of birth or early in life, may persist. It is conservatively estimated that there are 200 million carriers worldwide.

In addition, infection with hepatitis B virus may progress to chronic liver disease, including chronic active hepatitis and cirrhosis, and there is compelling evidence of a causal relationship between hepatitis B virus and primary liver cancer, which is one of the world's most common malignant tumours.

In the past, hepatitis B was diagnosed on the basis of infection occurring about 60 to 180 days after the injection of human blood or plasma products or the use of inadequately sterilized syringes and needles. The development of specific laboratory tests for hepatitis B confirmed the importance of transmission by inoculation through the skin and infectivity appears to be especially related to blood.

However, many reports have demonstrated that hepatitis B is not spread exclusively by blood and blood products. These include the observations that under certain circumstances the virus can be caught by mouth, that it is endemic in closed institutions and institutions for the mentally handicapped, that it is more prevalent in adults in urban communities and among those living in poor socio-economic conditions, that there is huge reservoir of carriers and that the carrier rate and age distribution vary in different regions.

There is much evidence for the transmission of hepatitis B by intimate contact and by the sexual route. The sexually promiscuous, particularly male homosexuals, are at very high risk of infection with hepatitis B virus. Hepatitis B surface antigen (Australia antigen) has been found in blood and in various body fluids such as saliva, menstrual fluid, and breast milk and these have been implicated as vehicles of transmission of infection. Contact-associated hepatitis B is thus of major importance.

Transmission of the infection may result from accidental inoculation of minute amounts of blood or body fluids contaminated with blood such as may occur during medical, surgical and dental procedures, immunization with inadequately sterilized syringes and needles, intravenous drug abuse, tattooing, ear piercing and nose-piercing, acupuncture, laboratory accidents and accidental inoculation with razors and similar objects which have been contaminated with blood.

Additional factors may be important in the transmission of hepatitis B infection in the tropics and include traditional tattooing and scarification, blood letting, ritual circumcision and repeated biting by insects may play in the spread of hepatitis B are conflicting. Hepatitis B has been detected in several species of mosquitoes and in bed bugs which have either been trapped in the wild or fed experimentally on infected blood, but evidence that the virus recurs in insects has not been obtained. Mechanical transmission of the infection, however, is a possibility.

Transmission of hepatitis B from mothers to their babies can occur before birth and appears to be an important factor in determining the prevalence of the infection in some regions, particularly in China and South East Asia. The risk of infection in the infant may reach 50 to 60 per cent, although it varies from country to country and appears to be related to ethnic groups. There is also a substantial risk of infection if the mother has acute hepatitis B in the later part of pregnancy or within two months after delivery. The precise mechanism of infection is uncertain,

but probably occurs during or shortly after birth as a result of a leak of maternal blood into the baby's circulation, its ingestion or inadvertent inoculation. Most children thus infected become persistent carriers.

The carrier state is defined as persistence of hepatitis B in the circulation for more than six months. It may be life-long, may be associated with liver damage varying from minor changes to chronic active hepatitis, cirrhosis and primary liver cancer.

Several risk factors have been identified in relation to development of the carrier state. It is more common in men, it is more likely to follow infections acquired in childhood than those acquired in adult life, and more likely to occur in patients with defects of the immune system. A carrier state becomes established in about 5 to 10 per cent of infected adults. In countries where hepatitis B infection is common, the highest prevalence is found in children aged four to eight years with steadily declining rates among older age groups.

Survival of hepatitis B is ensured by the huge reservoir of carriers. The prevalence of carriers particularly among blood donors, in northern Europe, North America and Australia is 0.1 per cent or less; in central and eastern Europe up to 5 per cent, a higher frequency in southern Europe, the countries bordering the Mediterranean and parts of Central and South America, and in some parts of Africa, Asia and the Pacific region as many as 20 per cent or more of the apparently healthy population may be carriers. There is an urgent need to identify the mechanisms which lead to the carrier state in areas where the infection is common and to introduce ways of delaying its transmission.

Examination by electron microscopy of serum containing hepatitis B surface antigen reveals the presence of small spherical particles measuring about 22 nm in diameter, tubular forms of varying length but with a similar diameter, and large double-shelled or solid particles approximately 42 nm in diameter (Figure 2). The 42 nm particle is the complete hepatitis B virus, whereas the small particles and the tubules are non-infectious surplus virus coat protein.

Plasma containing hepatitis B surface antibody (the protective antibody) can be selected from blood donors and used for a preparation which may confer temporary passive immunity. The use of such a preparation is a single acute exposure, such as when blood or other material containing hepatitis B is accidentally inoculated, taken by mouth or splashed on the eye. The timing of the first dose is important. It should be administered as early as possible and preferably within 48 hours, and a second dose given a month later.

Recently, interruption of the passing on of hepatitis B from mother to child was achieved and the carrier state prevented in some infants by the administration of a hepatitis B immunoglobulin within 48 hours of birth and repeated at intervals. Further studies including combined passive and active immunization, are in progress in several countries.

The high rate of infection with hepatitis B in certain populations in the developed countries and among the general population in many developing countries stresses the urgent need for a hepatitis B vaccine. Among the groups which might benefit from such a vaccine are patients who require multiple transfusions, patients with natural or acquired immune deficiency, patients with haemodialysis, transplant and oncology units and residents and staff of institutions for the mentally handicapped.

Viral hepatitis is an occupational hazard among health care and laboratory personnel. High rates of infection occur in homosexual men, drug addicts and prostitutes. Protective immunization of susceptible women of child-bearing age and infants may be the only practical way of interrupting transmission of the infection. Immunization must also be considered for non-immune persons living in certain tropical and non-tropical areas where the prevalence of hepatitis B infection is high and where the carrier state may reach 10 to 20 per cent of the population, and liver cancer is common.

continued over page

A problem for the world

continued from page 11

The inability to grow hepatitis B virus in tissue culture has prevented the development of conventional vaccines. Attention has therefore been directed to the use of other preparations for active immunization. The foundation for such hepatitis B vaccines was laid by the demonstration of the relative efficacy of diluted serum containing hepatitis B virus and its antigens heated to 98°C for one minute in preventing or modifying the infection in susceptible persons. Since hepatitis B surface antigen leads to the production of protective surface antibody, purified 22 nm spherical surface antigen particles have been developed as vaccines (Figure 3).

These vaccines have been prepared from the plasma of clinically healthy human carriers. Although it is generally accepted that purified preparations of 22 nm particles are free of nucleic acid and therefore non-infectious, the fact that the starting material is human plasma obtained from people infected with hepatitis B means that special care must be exercised to ensure their freedom of all harmful contaminating material.

Small-scale safety tests were carried out in susceptible apes and in volunteers, and trials in the United States on protective efficacy in high-risk groups such as male homosexuals have shown the vaccine to be safe, potent and highly effective. In another study the vaccine prevented the development of the early carrier state of hepatitis B surface antigen among children at high risk of infection in Senegal. Other studies have been completed and this type of vaccine has been recently licensed in a number of countries.

In 1971, work began at the London School of Hygiene and Tropical Medicine to develop a "subunit" vaccine, not from the entire surface antigen protein of the 22 nm spher-

ical particles of hepatitis B virus, but from the essential immunogenic constituent polypeptides. Such vaccines will have obvious advantages in future since they are better defined chemically, more uniform and have an added margin of safety since they would be even less likely to contain any infectious virus or nucleic acid, components which might interfere with immune response or lead to side-effects.

Preparations containing the separated polypeptides have been examined both biochemically and serologically in several laboratories. In most studies, at least two major polypeptides have been found in the molecular weight range of 20,000 to 30,000, together with variable amounts of larger components. It appears some of the larger polypeptides represent integral host proteins. Several of the individual polypeptides are immunogenic, but purified polypeptides with molecular weight of 23,000 and 28,000 are particularly effective.

The major difficulty of obtaining sufficient quantities of the peptides in pure form was overcome by developments at the London School of Hygiene. The purification of viral coat subunits in large quantities has presented considerable problems with viruses possessing a lipoprotein envelope, where the immunogenic components are integral membrane proteins, highly hydrophobic, insoluble in aqueous media and requiring drastic treatment with detergents.

The extraction of the antigenic polypeptides with the non-ionic detergent Triton X-100 resolved one of the problems. Subsequently, a method of detergent removal which allows membrane polypeptides to reassociate into water-soluble protein micelles was developed. Protein micelles are aggregates of polypeptides arranged so that the hydrophobic regions are sequestered in the interior of the particles with the hydrophilic residues on the surface, so that the micelles are water-soluble.

Hepatitis B polypeptide vaccine preparation in micelle form (Figure 4) has been developed at the London School of Hygiene and Tropical Medicine. Comparison of the immunogenicity of the micelles with the 22 nm particle vaccine in mice showed that the micelles elicited a more vigorous protective surface antibody response than the intact particles at all dose levels tested.

Safety and protective efficacy studies in susceptible apes have been completed both in London and in the United States. Clinical trials of the micelle vaccine should begin shortly. Work is also in progress in several laboratories on developing future hepatitis vaccines by recombinant DNA techniques and by chemical synthesis. Such vaccines may also be presented in the micellar form. Numerous problems with these types of immunogens remain to be solved including large scale production and the development of safe and suitable adjuvants. The critical issues are whether antibodies induced by vaccines produced to genetic manipulation or by chemical synthesis will be protective, and whether protective immunity will persist.

The specific laboratory diagnosis of hepatitis A and B has revealed a previously unrecognized type of hepatitis which is clearly unrelated to either type referred to as non-A, non-B hepatitis. The infection has also been transmitted experimentally to chimpanzees. Although specific laboratory tests for identifying this new type of hepatitis are not yet available and the diagnosis can only be made by exclusion, there is considerable information about the infection. Non-A, non-B hepatitis has been found in every country in which it has been sought and it has a number of features in common with hepatitis B.

This form of hepatitis has been most commonly recognized as a complication of blood transfusion, and in countries where all blood donations are screened for hepatitis B surface antigen by very sensitive techniques, non-A, non-B hepatitis may account for up to 90 per cent of all cases of post-transfusion hepatitis. Non-A, non-B has occurred in haemodialysis and kidney transplantation units and among drug addicts. In several countries a significant number of cases are not associated with transfusion, and such sporadic cases of non-A, non-B hepatitis account for 15-20 per cent of all adult patients with sporadic viral hepatitis.

In general, the illness is mild and often without jaundice. However, there is evidence that the infection may be followed by a prolonged persistence of the virus in the blood and the development of a chronic carrier state. Several recent studies of the histopathological sequelae of acute non-A, non-B infection indicate that chronic hepatitis may occur in as many as 40-50 per cent of patients after infection associated with blood transfusion or treatment by haemodialysis.

Clinical and experimental studies in a number of laboratories suggest that non-A, non-B hepatitis may be caused by two or more infectious agents. Reference has always been made to the epidemic "endemic form" of hepatitis which is commonly transmitted by contaminated water and not caused by the recognized serotype of hepatitis A or hepatitis B. Serological tests for antigens and antibodies which are specifically associated with non-A, non-B hepatitis are not yet available and the cause has not been characterized virologically.

The author is professor of microbiology in the University of London and director of the department of microbiology.

The hepatitis research programme at the London School of Hygiene and Tropical Medicine is supported by generous grants from the Department of Health and Social Security, the Medical Research Council, the Wellcome Trust, the World Health Organization and Organon B.V. The hepatitis B vaccine development is supported by the British Technology Group (formerly the National Research Development Corporation), the Department of Health and Social Security and the Wellcome Trust.

MILESTONES

Michio Morishima looks back at Sir John Hicks' *Value and Capital*

Sir John Hicks' *Value and Capital* (1939) had a decisive influence upon me, and had I not read the book at the end of my impressionable teenage years I doubt whether I should have come to spend the latter half of my life in Britain.

It was in 1942 that I first began to read it in a pirated edition photocopied without permission of the original publisher. The Pacific War had begun only the year before, but the situation of war readiness had prevailed throughout my childhood. Thought control had become stricter every year, and when I was a student at high school even the rooms in my lodgings house were sometimes searched by the police.

The newspapers adopted an opportunistic attitude, and many university professors allowed themselves to become the instrument of the military. Marxists were arrested and many *tanaka*, "converts", became fanatical exponents of ultranationalism. The study of political economy along Nazi lines became popular; Nazi-type *geopolitik* was used to justify Japan's invasion of Asian countries.

Amid such total national hysteria the reading of work on economics by an Anglo-Saxon was a kind of passive resistance. There were almost no academics in this black period of Japan's history who attempted to show any positive opposition towards the military. The most they could achieve was the passive resistance of continuing pure research into the social science and philosophy of their Anglo-American enemies.

As a university student I belonged to this kind of "passive resistance" group - the membership was not strictly defined, but the members clearly constituted a single group. I hoped if I survived the war to become a social science teacher at a high school. I therefore visited Hideo Aoyama, the assistant professor whom I most respected within the group, and asked him what sort of book I should read to study economics. His reply was: "Read Hicks' *Value and Capital* is a book you should read straight away."

"Is it something which a first year student could read?" "You must understand that Hicks' economics is in effect an algebra concerning society. You will be all right if you tackle the book step by step, in exactly the same way as you solved algebra problems at middle school." At middle school I had been weak not just in algebra but in mathematics as a whole; but under the guidance of this particular professor I acquired the mathematics necessary to read Hicks' work.

Hicks' book introduced me to a refreshing intellectual world far removed from the dismal reality. At the time of my graduation high schools in Japan were excessively specialized, and those students who planned to specialize later in philosophy and sociology usually took German as their first foreign language. During my high school years, therefore, I had read the works of writers such as Goethe, Heine and Schopenhauer and had happily collected such books as G. Simmel's *Sociology*, despite my inability to read them. I was consequently quite ignorant of Cartesian clarity. For this reason the influence of Hicks' penetrating logic was all the greater. Furthermore, at a time of international conflict, it is a universal principle transcending nationalities provided considerable "spiritual" relief.

The group was very small but was a surprisingly advanced one in the field of mathematical economics. The mathematician, Masazo Sono, was known to specialists worldwide.

The author is professor of economics at the London School of Economics. This article was translated from Japanese by Janet Hunter.

BOOKS

Clearing the middle ground

by Alan Ryan

A Treatise on Social Theory
Volume One: The Methodology of Social Theory
by W. G. Runciman
Cambridge University Press, £25.00 and £8.95
ISBN 0 521 24906 6 and 27251 3

All sorts of people owe an intellectual debt to Gary Runciman: classicists for his first work on Plato's dialectic, students of Weber for his book on Weber's philosophy of social science; sociologists and theorists of the welfare state are indebted to *Relative Deprivation and Social Justice* (1966), which established why the worst-off members of British society feel surprisingly little resentment of the contrast between themselves and the richest, and political philosophers to his little book *Social Science and Political Theory* (1962), a milestone in the revival of political philosophy. He is still only 48 years old, and looks like a well preserved 30, and if you feel tempted to think that, well, he has had the advantages of Eton and Trinity, you are brought up short by recalling that he has always been a part-time academic, spending much of his life running the family shipping line.

Since 1966 Gary Runciman has been working on a trilogy, the first part of which is just published, the rest being promised between now and the end of the decade. The first, *The Methodology of Social Theory*, runs to 350 pages, and demands a rather subtle eclecticism: volume two is to spell out his substantive social theory in terms of social relations, social structures and social evolution, while volume three will apply that theory to the example of twentieth-century Britain. To embark on an intellectual task which will take two and a half decades suggests a degree of intellectual calm and self-confidence utterly remote from the experience of many of us who do not have them may find it exhausting to contemplate. To set about writing this first volume smacks of finding Wren about St Paul's when he had only just laid the foundations.

Diffidence is not exactly dispirited by Runciman's opening words: "The debate between those who affirm and those who deny that there is a fundamental difference in kind between the sciences of nature and the sciences of man has continued without resolution for more than two hundred years. If the arguments to be put forward in this book are correct, the debate can for practical purposes be regarded as closed. But to show this is not so much to arbitrate among the contending parties as to rewrite the terms in which the debate is framed. My principal argument to this effect can be summarized in a sentence: there is no special problem of explanation in the human sciences; but only a special problem of description."

Closer inspection makes one wonder whether one need be quite so timid; it is one thing to claim to have settled what is the single central issue in the methodology of the social sciences, another altogether to claim to have done no more than rewrite the terms of the debate. Then one's third thought breaks in: Runciman surely is claiming to have settled the matter, since he plainly thinks that if only the participants to the two centuries of fruitless quarrelling between positivists and "interpretivists" had drawn the "right" distinctions they would have come to the only sensible conclusion much quicker.

The alarming sensation that one is being given a magisterial account of a case which may be either astonishingly bold or astonishingly straightforward lingers throughout the book. The great virtue of the book is that issues are allowed

proper space and sufficiently elaborate treatment; examples are properly spelt out, morals are carefully and accurately drawn; there are no hurried allusions to favourite examples with a vague suggestion that these prove the case the author wants to make. The corresponding vice is that it is not very clear just where new ground is being broken.

If you regard methodology much as Locke regarded philosophy, this will seem a trivial complaint: it is those who raise a dust and then complain they cannot see who fuss about novelties, and once we have laid the dust we shall see well enough for practical purposes. If Runciman does, indeed, do little more than render obvious again what should be obvious but has been obscured by his predecessors, he has done as much as Locke aspired to and more than most of us manage. And even if it is obvious that there can be genuine explanations of social phenomena, it does not follow that what they are is obvious; and, of course, it has seemed so far from obvious to a whole tradition of philosophy from Dilthey to Winch that they have all concurred in agreeing that whatever the social sciences are it is not sciences.

Runciman's argumentative strategy is straightforward. He wants to clear a middle ground, in two ways. In the first place, he wants to occupy a middle ground between those who argue that the *Geisteswissenschaften* are utterly and wholly different - either in method or subject matter - from the *Naturwissenschaften* - in effect standing with Weber and resisting the rival attractions of Dilthey and B. F. Skinner. In the second place, he does not want to delay the social scientist while the philosophers wrangle with each other; methodology for Runciman occupies a halfway house between the cookbooks which practising social scientists need to tell them how to draw up a questionnaire and compute the significance of the results it yields and the philosophical inquiries into the concept of causation or law or explanation which is the job of the philosophy of science. This book is essentially practical. Assuming, rightly enough, that philosophers' anxieties about counterfactuals, dispositionalism, the truth value of future tense statements and so on do not in the least impugn biology, chemistry and physics, Runciman argues that the question of what, if anything, marks off the sciences of man from the sciences of nature is a question for the methodologist with practice in mind, not for the philosopher.

To my mind, this is a less than watertight division of labour and technique. To some extent, Runciman preserves the illusion that the distinction holds up as easily as he implies by being scrupulously and courteously detailed in acknowledging his debts to historians, sociologists, anthropologists and so on, but not giving much indication of which philosophers he has relied on for his views on causation and the like. This isn't exactly a complaint, let alone an accusation of sharp practice - one of the great pleasures of the whole book is the continuous flow of apt and interesting examples from all over the social sciences, and it is of course, true that these belong to their authors in a way that general philosophical claims do not. All the same, Runciman's relaxed view about the way social scientists can produce justified claims about causality owes a lot to philosophical analyses of causation associated with the work of John Mackie and Donald Davidson. Why not admit that much of what goes on here is philosophical argument of high quality?

Still, the important thing is Runciman's counterattack on fashionable views about the non-objectivity of the social sciences, about the non-existence of a distinction between fact and value, and about the irrelevance of causal categories to dis-

plines which depend upon interpretation rather than causality. What Runciman does is in outline simple; the pleasure lies in the detail of the execution, though the simplicity of the outline is itself quite impressive. He distinguishes between reportage, explanation, description, and evaluation; and he argues that when philosophers or social scientists harp on about "understanding", they fail to distinguish as they ought between what he calls *primary* understanding - giving the sort of account of what happened which the Recording Angel would have entered in his book - and *secondary* understanding, which is, simply, explanation - adducing the causes of what happened.

Beyond this he employs the notion of "description" or *tertiary* understanding to distinguish something which is peculiar to the social sciences and without analogue in (almost any of) the natural sciences. Description is not simply a matter of saying what happened; that is just reportage, what the angel puts in the book. Description is saying what it was like, and this is peculiar to those disciplines where empathy is possible and necessary. There may well be limits to the accuracy with which anyone can really know what it is like to be anyone else; Runciman agrees that it is probably true that men and women, let alone members of different cultures, find it hard to appreciate what it is in the experiences of others which make them like their own. But, says Runciman, here as everywhere else in social theory, it is a terrible mistake to conclude that because our understanding in these terms may be less than perfect it can never be good enough, that it cannot be very much better or very much worse. Philosophers may agonize about the problem of other minds, and about what we know when we know what is in another's mind; but the methodologist properly concentrates his attention on what it is that makes some descriptions good ones and others bad ones.

Successful description meets the test of authenticity - best defined negatively as "the active and sustained avoidance of what Dr Johnson called 'cant' and George Orwell called 'humbbug'". Runciman quotes telling examples of authentic "description" from autobiography and literature, though he is careful not to suggest as others have that descriptive sociology is done better by novelists and poets than sociologists. Autobiographers may or may not produce accounts of this count - in Runciman's view Rousseau falls, Pops succeeds. The sociologist who succeeds on this count - must face the further test of producing a properly representative account - again Runciman appeals to examples: Halsey's *England in 1815* no doubt omits a few things which ought to have been included, but not many; in that lies part of its success as a description. Vices to avoid include sins of misrepresentation, incompleteness, oversimplification, abstrusity, and sins of mystification, suppression, exaggeration and ethnocentricity.

Much of what Runciman calls description many people will think belongs in the box labelled "reportage". But the point of Runciman's distinctions between primary, secondary and tertiary understanding is precisely to make us grasp that we can when we want distinguish between what happened, why it happened, and what it was like. The pened, and what it was like. The practical-mindedness of his analysis is demonstrated most clearly in his treatment of reportage, for what Runciman needs to show - and does convincingly show - is that there is no more reason for the social scientist to fear that there is no fact of the matter which it is his job to explain than there is for the natural scientist. If, to take his example, John Morley



W. G. Runciman

of Bournemouth was performing a rain dance in the summer of 1976 with the aim of breaking the drought of that year, then that is what he was doing. This does not mean that it is unproblematic: the report can be challenged on all sorts of grounds to do with the intentions and beliefs of Mr Morley and the nature of rain dances, and we might concede that he was pretending, demonstrating the dance, giving it, or whatever. But there will be a fact of the matter which we can get agreement on without preempting the question of how to explain the fact. That much is enough to secure the objectivity of social science, enough to secure that different theories are brought to bear on the same facts.

There is, however, no very clear line between non-preemptive and preemptive descriptions. When Colingwood was baffled by what people thought they were up to in building the Albert Memorial, he was not preempting any explanation by holding that it was their building of the Albert Memorial which needed accounting for; but Runciman thinks that to describe some set of activities as "feudal" does preempt the possible explanations of what was going on. The line is not one which yields to immediate conceptual analysis, but you could doubtless get a working consensus on it, and that would be enough for Runciman.

Much the same appeal to a practical consensus marks Runciman's approach to secondary understanding, or explanation, in the usual sense. Essentially, he stands by the view he has expressed elsewhere in the book that what lies behind the social scientific explanation are rule-of-thumb psychological generalizations about the beliefs and dispositions to act of individuals. Theories in social science are not strong, deductive, axiomatized constructions; they are weak, they often license our belief that a given event was causally determined - in at least a semi-deductive fashion - but they are adequate.

They provide enough of an explanation when nobody else can think of a better one.

And at the other end of the argument, Runciman takes a similarly relaxed view of values; valuations can be distinguished from descriptions and explanations and reports sufficiently for practical purposes. Not all descriptions need be or will be couched in "value neutral" terms; the crucial thing is that a description should not preempt subsequent valuation. Since we can commonly distinguish without much difficulty what in a given account amounts to an attempt to preempt subsequent evaluation, value freedom is no particular problem.

Since I share almost all of Runciman's views I find *The Methodology of Social Theory* a wholly congenial piece of work; but its calm, measured, unaggressive approach will, I fear, do nothing to endear it to those who do not much like empiricism-tempered-by-Weber and it may do less than it ought to engage the interest of those who are already convinced. Runciman, of course, thinks the test of methodology is good theory, and those of us who are still alive in 1990 or thereafter will be in a stronger position at the end of volume three to make up our minds about volume one. In the meantime, I wonder who will read this book - and I mean read it as opposed to admire it at a distance. For those hesitating on the brink, it must be said that there is a very good education to be had here, merely from Runciman's illustrations; there's a better one to be had from the high grade argument in which the book abounds; and for those with an ear for such things, there are a good many slightly silly jokes scattered throughout it too.

Alan Ryan is a fellow of New College, Oxford.

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BOOKS

Against the shoal

Women and Literature 1779-1982: the collected papers of Muriel Bradbrook, volume two
Harvester Press, £19.50
ISBN 0 7108 0401 6

"Starved but valiant young women - that's my impression", wrote Virginia Woolf in her diary after lecturing at Girton in 1928. Among the undergraduates whom Woolf "blandly told... to drink wine and have a room of their own", and who struck her as "intelligent, eager, poor, and destined to become schoolmistresses in shoals" was Muriel Bradbrook, preparing for a career which now makes Woolf's description of her student audience seem unduly lofty in tone and pessimistic in outlook.

Recalling the same occasion in a piece included in the second volume of her *Collected Papers*, Muriel Bradbrook gives the other side of the picture by recording succinctly that "We enjoyed Mrs Woolf but felt her Cambridge was not ours", and noting that the "dreary meal at a women's college" which Woolf cited as an instance of women's disadvantages might not have been so bad if the novelist hadn't kept it standing while she gazed admiringly at the sunset on the Backs. There is a brisk refusal to dwell on the gloomy aspects of Bradbrook's own Cambridge years which were marked by "bereavement, poverty and falling in love" or to characterize feminism in terms of an unequal struggle against men, and this is typical of all the essays, personal reminiscences and adapted lectures collected here under the title *Women and Literature 1779-1982*.

Various topics and figures are considered in individual items, the emphasis being on women's capacity to control their own destinies. There are celebrations of eccentrics like the "Ladies of Langdon" who turned their lives into a romance, gothic and pastoral in style; and attention is also given to energetic reformers like Barbara Bodichon, one of the founders of Girton. Bodichon's example is shown to have "changed the climate of opinion, not instantly, as did Florence Nightingale's, but steadily, like the influence of the weather"; the tranquil watercolours she painted, and her tender, intuitive friendship with George Eliot are contrasted with her strenuous public life and seen as revealing layers of sadness beneath her outward facade.

Similarly acute insight into the way individuality can grow, perhaps all the more strongly when feelings are concealed and responses inhibited, or at least kept half-conscious, is at work in a fine essay on "Reflection in the Later Novels of Jane Austen" where the human warmth lying behind the apparent coolness of Au-

sten's mature fiction is convincingly demonstrated. Throughout the collection, scholarly precision and a highly personal feeling for literary moods and cadences - and, very often, for silences - are combined in an especially attractive manner. So, for example, "Paris and the Bernhardt Era" not only traces major developments in European drama, but evokes the atmosphere in which Bernhardt created her distinctive blend of "delicate lyricism and erotic boldness". Bernhardt's kind of theatre was worlds apart from the avant-garde trends represented by Alfred Jarry: on him, we are told, "she might have pulled a gun". But there was room in the French theatre for both extremes, an open-mindedness which Bradbrook relates to her own definition of "true classicism" as "that which can tolerate change, and without changing its identity, can modify itself to accommodate the new works".

It is in this sense that Bradbrook's approach to the literature discussed in these essays comes over as "classical", accommodating the new while preserving identity as a constant feature of pieces on such figures as Ibsen, Strindberg, Kathleen Raine, and Virginia Woolf in her most experimental phases. Perhaps nowhere is Bradbrook's flexibility more telling than in her ability to illuminate her argument by introducing images and examples which offer a fresh, even a sudden, perspective on the material being treated. To see Nora as an instance of women's disadvantages might not have been so bad if the novelist hadn't kept it standing while she gazed admiringly at the sunset on the Backs. There is a brisk refusal to dwell on the gloomy aspects of Bradbrook's own Cambridge years which were marked by "bereavement, poverty and falling in love" or to characterize feminism in terms of an unequal struggle against men, and this is typical of all the essays, personal reminiscences and adapted lectures collected here under the title *Women and Literature 1779-1982*.

Craftsmanship, not any heady notion of genius, is what Bradbrook seems to value most in writing by, and about, women. It is in this respect that the aims of the novelist, poet, or dramatist "can be said to coincide with those of a teacher and expert in her craft as Bradbrook. She notes that advances in women's emancipation in the second half of the eighteenth century and again in the second half of the nineteenth century, "began with an educational improvement; in social rather than in legislative changes", making a "wave theory" of general progress seem tenable. In the twentieth century, Bradbrook has undoubtedly helped this pattern to continue, and it is as an educator through her writing about literature - not as one of the "shoal" Woolf envisaged, but utterly individual, and never schoolmistressy.

Valerie Shaw

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Puritan and platonist

The Poet's Time: politics and religion in the work of Andrew Marvell by Warren L. Chernaik
Cambridge University Press, £19.50
ISBN 0 521 24773 X

A turning point in the history of Marvell criticism was the celebration in 1921 of the tercentenary of the poet's birth, when his native city of Hull ran decorated trams to mark the occasion and produced a commemorative volume which reprinted T. S. Eliot's essay published earlier that year in *The Times Literary Supplement*. This essay discerned in Marvell's work what Eliot thought would provide a model for modernist poetry; a taste for metaphysical poetry was now to become part of a modern sensibility.

This changed the way in which Marvell had previously been seen. To his contemporaries, as Mr Chernaik reminds us, Marvell was a patriot and a political satirist, whose lyric poetry was almost unknown. All the editions of the poems up to and including Grosart's edition of 1982 in *World's Famous Sonnet* looked back to the seventeenth century which for him and for other lovers of freedom was the source of their ideas and principles:

Great men have been among us;
And tongues that uttered wisdom
- better none:
The later Sidney, Marvell, Harrington,
Young Vane, and others who called Milton friend.
These moralists could act and comprehend.

Mr Chernaik charts clearly the cross-currents of thought and belief in an age which was the most turbulent in our history and one which laid the foundations of our modern state. He goes to the heart of Marvell's politics and religion (and they were two sides of the same coin at this time) when he declares that for Marvell "The central event in human history is the fall". Although in many ways he anticipates the political theory of Locke, Marvell remains closer to Milton and this study throws light on the developing tradition that runs through all three. Like Milton, Marvell sees authority as necessary in a fallen world. He does not share the optimistic and easy-going view of human nature of later thinkers, nor, on the other hand, does he elevate human authority to the almost divine status given it by Hobbes, Parker, and Tillotson. The will of kings, as of other men, is "infected" by sin; and Milton's "sovereign Reason" is always threatened by "sensual appetite"; it is for this reason, that a constitutional monarchy can best hold the balance between the government and the people.

Mr Chernaik rightly depicts Marvell as a puritan and a platonist. This does not mean that Marvell was a nonconformist. Like his father, who ministered at Holy Trinity Church in Hull, he was a member of the Church of England, but one who regarded that church as a gathering of believers, taught by the clergy to interpret the scriptures and receiving from them the sacraments, but having to work out their own salvation. Like Milton, Marvell was a puritan; he was also a Christian platonist who saw the prelapsarian world as a realm of timeless absolutes, providing an ideal pattern to which by God's grace we can approximate in this life. Occupied for most of his life with the often shabby contingencies of politics, Marvell could hold in his mind the "happy garden state" at Nunapleton where man's lost Paradise had almost been recovered and which inspired some of his finest poetry. Few studies of Marvell bring together so fully his religion, his politics, and his poetry, but this one does so admirably.

R. L. Brett

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A portrait of Alexander Pope, by Sir Godfrey Kneller, 1722, taken from David Piper's *The Image of the Poet: British poets and their portraits* (Oxford University Press, £17.50).

Critical stance

The Attack on Literature and Other Essays by René Wellek
Harvester Press, £18.95 and £5.95
ISBN 0 7108 0464 4 and 0469 5

If they had to choose the figure who has done most to establish literary theory as a subject in its own right in the Anglo-Saxon academic world, most teachers of literature would probably name René Wellek. For at least two decades after its appearance in 1949 his and Austin Warren's *Theory of Literature* served as the standard textbook and reference-work on the subject, at least in this country (it has also been translated into 22 languages); most teachers of literature in British higher education must have either read it, or looked at it, or thought that they would read it one day. Wellek's subsequent books have been less widely used. But his monumental *History of Modern Criticism* is - or will be when it is completed - unrivalled, and his all-embracing knowledge of the theory as well as the history of criticism has given a unique authority to his many essays and papers on individual topics in these two fields.

The Attack on Literature and Other Essays is the most recent of a series of collections of these essays and papers, and provides a clear picture of the principles and concerns that have underlain Wellek's work. Written in the course of the 1970s, it contains a number of general discussions of the nature, purpose and present state of criticism; accounts of two schools to which Wellek has felt particularly close, the Russian Formalism and the American New Criticism, as well as of trends in American criticism in the sixties; a set of reflections on the aims and assumptions of his *History of Modern Criticism*; together with a "Prospect and Retrospect" of his whole academic career. In this last paper Wellek makes the interesting point that he has always had reservations about all the different movements that have influenced him. What is especially striking about the whole book, however, is the sympathy that it shows towards almost all the major trends of literary criticism and literary theory in recent years.

Wellek believes that literature, or literary art, constitutes a distinct category, which may be defined as "writing dominated by the aesthetic function" (page 26). This notion is defended primarily on grounds of

intuition; the distinctive character of the aesthetic experience is "as self-evident as the color of snow or the sensation of pain" (page 31). While recognizing that a more exact definition of the experience is extremely difficult, he insists that it should not be seen relativistically, that it does possess essential constant features in different cultures and different periods. He is inclined to associate it, somewhat tentatively, with properties of unity in the literary work, although he also emphasizes that it gives knowledge, albeit obliquely, of the real world.

Thus, he repeatedly argues that evaluation is an integral part of literary criticism. Moreover, as he is against relativism in evaluation, so he is against relativism in interpretation; there are "obligatory" meanings of a work of art that make complete freedom of interpretation not only impossible, but irresponsible. At the same time he rejects as necessarily insufficient the causal explanation of literature by reference to the historical circumstances in which it is produced; art is created, he suggests (page 75), "in a free act of the imagination".

This conception of literature and criticism, which evidently has a great deal in common with that of the American New Critics, is the reason for Wellek's rejection in the book of psychoanalytical and Marxist approaches to the subject. The Genealogical, most structuralism of the "classical" period of the sixties, the Chicago Neo-Aristotelians and Northrop Frye, as well as much criticism of a non-theoretical kind. Post-structuralism is not really discussed as such, but it is clear, especially from the essay that gives the collection its title, that it is a movement for which Wellek has very little sympathy.

Yet regrettably his arguments against these movements are scarcely developed, and his own view of the subject is stated rather than argued. Though Wellek may well feel that he has argued it sufficiently elsewhere, the bulk of the book is taxonomic and synoptic; it classifies and outlines different movements of criticism, different concepts of literature and literary history, and so forth, in a way which is undoubtedly useful, but which leaves one wishing that Wellek had engaged with these to a much greater extent. Most of them present real challenges to his own point of view, and it would be interesting and profitable to see him take up such challenges more seriously.

David Robey

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BOOKS

American rocketry

JPL and the American Space Program: a history of the Jet Propulsion Laboratory by Clayton R. Koppes
Yale University Press, £16.95
ISBN 0 300 02408 8

Now we go over to our reporter at the GALT Laboratory in California for the latest news of the space mission to Mars. Some elements of this statement would seem quite understandable but, at first you might wonder where and what was the so-called GALT Laboratory. In fact, this was the original name of the now famous Jet Propulsion Laboratory (JPL) which in the past few decades has established itself as the world's leading laboratory in the American unmanned space programme associated with the exploration of the solar system.

In a fascinating book, Clayton Koppes has described the unlikely developments that ultimately led to the formation of JPL and the important role it was later to play in the space programme. Rocketry suffered from a low reputation in the 1930s among the very proper academics at the California Institute of Technology's Guggenheim Aeronautical Laboratory (GALT). However, the key element in the formation of JPL was the brilliant aerodynamicist, Theodore Von Karman, whose major involvement in rocketry came through his graduate students. Frank J. Malina, to whom Von Karman was a second father, William Bollay, a Karman assistant, together with two enthusiasts, John W. Parsons and Ed Forman, were an unlikely group. They were later joined by Apollo Smith, Hans-Sen Telen, and Weld Arnold, a graduate student in meteorology.

The Caltech campus greeted the rocket group warily. The tests were noisy and dangerous. But their work was showing fundamental developments so that in 1941, they received a grant of \$22,000 from the air corps that enabled the rocket group to make a welcome exit from the Caltech campus. They negotiated with the city of Pasadena for a lease on seven acres in the Arroyo Seco, six miles from the campus, where their group had tested their first rockets. The proposed move was not, however, welcomed by everyone. The city was reluctant, since many high class homes overlooked the canyon. But Pasadena finally agreed, provided that the lease would be terminated at the end of the war. Now in 1983 we recognize the more permanent structures that reside in the canyon, suggesting a more successful marriage between the residents and the present generation of workers at JPL.

World War II provided a tremendous drive for the rocket activities, since by midsummer 1943 the allies were aware that the Germans were probably developing large rockets and missiles. This led Von Karman, Malina and Telen to propose some fundamental developments, which would then lead into the largely unexplored realm of supersonic flight. Their report of November 20, 1943, JPL-1, was the first use of the term, Jet Propulsion Laboratory.

The group made fundamental breakthroughs in both liquid and solid propellants, developed the JATO rocket motors during World War II, and engineered sophisticated tactical nuclear missiles during the cold war. In this way American rocketry evolved, not from Robert Goddard or the German V2 pioneers, but from JPL. The programme at JPL was to develop the Private, a small, light range unguided missile with a solid propellant engine; then followed by a heavier, larger range Corporal. Von Karman added: "the missile ranks stop with Corporal, since that's the highest rank at which they actually work". However, the laboratory was to meet many problems and it would be a decade and a half before the completed develop-

ment of a Sergeant.

The acceleration tempo of JPL in 1950-51 refuelled the controversy over the location of the laboratory. Residents continued to claim that JPL was unsafe. Rumours circulated that the flashing lights that sometimes woke residents early in the morning heralded ambulances taking out the bodies of JPL personnel killed in tests. This, of course, was not the case. Also, the town/gown problem had now been resolved and JPL now formed an integral part of the community.

Space exploration was always the dream of the staff of JPL, and soon this represented the greatest set of achievements for the laboratory. In the race to catch the Russians after Sputnik, the laboratory provided the first American satellite, Explorer I. But the route to major success was difficult, since project Ranger, designed to impact on the moon, suffered six failures. The explanations were varied, and ranged from managerial failures to errors in some basic computer programs. The JPL management at this time was frequently criticized, and was described by one distinguished scientist as like working with the marines. However, the strength and vision of Dr William Pickering, a former Caltech professor of electrical engineering, was crucial to steering JPL through the success-

ful period of the 1960s and 1970s; which, at its height, had 4,560 employees. In the years of his directorship, 1954-76, the laboratory was primarily responsible for the management of the National Aeronautics and Space Administration's planetary programme which has now seen spacecraft to all the planets from Mercury to Saturn, together with the important landing on Mars in 1976 by the Viking spacecraft. These achievements have advanced the management skills of the staff, who have built up their own technological programmes in the laboratory. The JPL missions have helped to change our picture of the solar system, as well as placing the Earth in perspective.

Koppes's excellent book provides a well-written account of this fascinating history. For those of us who have had the good fortune to have worked at JPL, the discussions are fascinating, since they describe so much which we have witnessed and participated in.

Garry Hunt

Garry Hunt is Director of the Centre for Remote Sensing, and head of the atmospheric physics group in the Blackett Laboratory, Imperial College, London.

Formal logic

Formal Number Theory and Computability: a work book by Alec Fisher
Oxford University Press, £16.00
ISBN 0 19 853178 8

The theoretical study of the potentialities of computing machines, sometimes known as recursive function theory, is one of the major developments in mathematics during the century. The significance of the pioneering work of Gödel, Church, Kleene and Turing in the 1930s is now well established and understood. They were able to give, via Church's thesis, a mathematical characterization of the notion of a computable function; that is, answer the question: which functions can be evaluated by some (possibly very large) computing device?

Alec Fisher's book is an elementary introduction to the basic ideas of computability and is intended to be used for a short first course in mathematical logic. It is described as a "work book"; that is, students (first-year or second-year undergraduates) should be able to learn the subject by reading the text and doing the exercises as they occur. Many of these exercises are an integral part of the theory and have been chosen to help the student understand the theory. Complete solutions are given in a 50-page appendix. Unlike some other experienced authors in this direction I feel that the author has struck the right balance between text and exercises.

The book is in two parts: the formalization of number theory, and computability theorems. The first three chapters introduce some ideas and discuss informally the underlying rules of reasoning and logic involved. This part is well written and could be required reading for all first-year undergraduate mathematicians.

Chapter four gives a brief sketch of mathematical philosophy. A student new to the subject would need guidance here, and it is not essential to the main development it could have been omitted. The next three chapters are concerned with the first order theory of the natural numbers, including a discussion of Presburger's arithmetic. The material follows closely that given in Kleene's *Introduction to Metamathematics* (1952).

Though precise, it is too formal and labourous for an introductory text. The second part of the book begins with three chapters, providing a clear and well-written introduction to clear and well-written introduction to computability using Shepherson-Sturgis register machines. Much use is made of flow diagrams to describe the computing processes. These diagrams are used to show that the

elementary operations of addition, multiplication and quotient, and so on, and the process of Gödel numbering a theory are computable. The sections on numerals and representations are again rather pedantic.

Chapter 11 gives proofs of Gödel's first incompleteness theorem and some related results and the final chapter presents a discussion of some undecidability results including theorems on finite axiomatisability and the halting problem. The style changes in this latter part of the book: there are fewer exercises, and more motivation and explanation could have been provided - a pity as these chapters contain the main results.

This well-written book is a useful addition to the mathematical logic literature, and should introduce an important development in mathematics to a wider audience. The book is slightly marred by the excessive formalism used in some parts, obscuring the essential spark of novelty that the subject should have.

H. E. Rose

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Physical phenomena

Similarities in Physics by John N. Shive and Robert L. Weber
Adam Hilger, £9.95
ISBN 0 85274 540 0

The authors tell, in their preface, of a recruiter for a large general electric company who, when interviewing, would seek to discover whether an applicant was inclined to notice differences of form and purpose between two ordinary objects presented to him, or similarities. His experience had led him to the view that those likely to become innovative scientists would notice similarities, and those who would succeed in administration, differences.

Perhaps this is a down-to-earth expression of the thesis, which has been argued most extensively by Arthur Koestler, that at the very point of creative thought there is a perception of similarities in separate lines of musing that come together by chance. In any case, the authors commend students of physics to be alert to similarities when observing and reading, and they have taken that as the theme of their book. By quoting from Mach and Maxwell, they also link the question of similarities with the economy of description that is the essence of science and of physics in particular.

The authors' aim, however, was not to discuss the nature of similarities in a philosophical way but to make explicit similarities within the basic physics currently taught to undergraduates. A large part of the book deals with oscillations and wave phenomena, ground which has been well covered previously. The age-structure of the academic profession is now such that most academic staff in physics departments will recall that undergraduate physics courses were widely reformulated about 20 years' ago, and that one of the benefits sought at the time was the economy in teaching and in learning that could come from recognition of similarities between topics.

This was a wish, too, to emphasize the generality of mathematical methods of analysis of physical phenomena, that is, of what happens rather than of what is. A course on the mathematical physics of wave phenomena became a core component in most undergraduate

physics courses, with illustrations from optical, acoustic, mechanical, electromagnetic and quantum-mechanical phenomena; it was in this area that the aims were most fully and readily realized.

Similarities in Physics pursues that approach into other areas, with chapters on steady flow (linear responses), exponential variations, image formation, "the ubiquitous kT " and noise. Many students should find help here in acquiring a working understanding of some difficult phenomena through the comparisons made with more readily appreciated, similar phenomena. The authors will have had to determine the level of sophistication, especially of mathematics, that would admit. Their choice sometimes limits the extent to which they were able to move on from noting an analogy to developing more fully the technical "similarity". This applies, for example, to the topic of impedance matching introduced in chapter 12 and to that of image formation in chapter 10.

For an experienced physicist the book will probably have few surprises but it might well (as it did for me) raise questions in his mind about the real character of the similarities whose existence we recognize but whose substance we rarely critically examine. Is it simply that most physical phenomena are represented by particular solutions of a rather small number of partial differential equations? If so, is the smallness of the number of differential equations a commentary on what can naturally occur, or on what would be counted as intelligible?

The final two chapters raise a number of topics which clearly lie near the heart of the matter (symmetry, conservation, similitude, dimensional analysis, feedback control - an elementary aspect of "systems"). In these broad areas a more systematic development would have been of considerable interest.

The authors see their book as mainly collateral reading material for existing courses, rather than a revision of the basic pattern of teaching. This is a good time, however, to consider how the similarities they point to might inform a new reformulation of the undergraduate physics curriculum - something that is, in my view, now necessary for much the same reasons as were applied last time.

D. H. Martin

D. H. Martin is professor of physics at Queen Mary College, London.

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FACULTY OF ENGINEERING AND SCIENCE
DEPARTMENT OF ELECTRICAL ENGINEERING
SENIOR LECTURER IN TELEPHONE SWITCHING SYSTEMS

An engineer with experience on modern telephone switching systems is required. The person appointed will be expected to teach up to Higher Technician level and to participate in the activities of the Communications Engineering Group in the Department.

SENIOR LECTURER IN DIGITAL COMMUNICATIONS
Graduate with relevant industrial or research experience required. The person appointed will be expected to teach Communication Engineering subjects to Higher Technician and Degree students and to develop the subject area of digital communications.

Further particulars and applications forms may be obtained from the Registrar, City of Birmingham Polytechnic, 100 Rye Lane, London SE13 1JF. Applications should be sent to the Registrar by 15th April 1983. Quota 1/2.

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SENIOR LECTURER IN COMPUTER AIDED DESIGN

Graduate with relevant industrial or research experience required. The person appointed will be expected to teach Microelectronic and Computer Engineering subjects to Higher Technician and Degree students and to develop the subject area of Computer Aided Design.

SENIOR LECTURER IN REAL-TIME PROGRAMMING
Graduate with experience of real-time programming languages (e.g. assembly code, PL/M, C, ADA) required. The person appointed will be expected to teach Computer Engineering and Microprocessor subjects to Higher Technician and Degree students and to participate in the research/consultancy activities in the Department.

DEPARTMENT OF MECHANICAL AND PRODUCTION ENGINEERING
SENIOR LECTURER IN MATERIALS AND PROCESS TECHNOLOGY

To teach on the full range of courses in the Department. Applicants should have a good Honours degree in Materials or Metallurgy or an associated discipline, and industrial and/or research experience.

DEPARTMENT OF HEALTH SCIENCES
SCHOOL OF SPEECH THERAPY
LECTURER II IN SPEECH PATHOLOGY AND THERAPEUTICS

Required to join a multidisciplinary team for the BSc (Hons) Speech and Language Pathology and Therapeutics (CNAA). The successful candidate will make a major contribution to the undergraduate courses and will also be involved with post-graduate short courses.

Applicants should possess a degree or equivalent qualification in Speech Therapy. An additional qualification in Psychology or Linguistics or a higher degree would be desirable and there will be opportunities for a Research and/or Clinical work. This is a new appointment.

FACULTY OF SOCIAL SCIENCES AND ARTS
LECTURER I/SENIOR LECTURER IN COMPUTER APPLICATIONS

(1/2 of full time)
Applicants should be qualified by training and experience and capable of developing computing knowledge in the Social Science and Arts and assisting staff in the application of computing techniques to teaching programmes in these disciplines. This appointment is for 2 years in the first instance.

DEPARTMENT OF LIBRARIANSHIP
LECTURER II/SENIOR LECTURER

(1/2 of full time)
Applications are invited from Graduate Chartered Librarians for this post with special responsibility for work with young people. Ability to offer other specialist an advantage.

EDUCATIONAL DEVELOPMENT UNIT
SENIOR LECTURER

This is a new post which is being created within the Educational Development Unit to support the design, development, production and use of student-centred learning materials in a wide range of subject disciplines. Computer assisted learning expertise particularly is sought. Experience in educational development consultancy and resource-based learning will be an advantage.

POLYTECHNIC LIBRARY
ASSISTANT TUTOR LIBRARIAN (AUDIO-VISUAL)
LECTURER I

Required in the Main Library at Perry Barr. A new Main Library building is under construction and audio-visual services are to be extended.

Salary scale: £10,000-£12,000 per annum.
LECTURER I: £10,000-£12,000 per annum.
LECTURER II: £10,000-£12,000 per annum.
SENIOR LECTURER: £10,000-£12,000 per annum.

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West Sussex Institute of Higher Education
(Incorporating Bishop Cleeve College, Chichester and Bognor Regis College)

LECTURER IN TEACHING STUDIES (PRIMARY)

Applications for the above post are invited from qualified teachers with a first degree in Education or a related subject. The successful candidate will be expected to teach and supervise students in the field of primary teaching studies. The salary is £10,000 per annum, plus a pension of £1,000 per annum. Applications should be sent to the Registrar, West Sussex Institute of Higher Education, 100 Rye Lane, London SE13 1JF, by 15th April 1983. Quota 1/2.

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Research & Studentships continued

University of London
The London School of Economics

SERC STUDENTSHIPS IN SEA-USE

The Science and Engineering Research Council (SERC) is offering a number of studentships in the field of sea-use. The successful candidate will be expected to research and develop new techniques for the use of the sea. The salary is £10,000 per annum, plus a pension of £1,000 per annum. Applications should be sent to the Registrar, University of London, 100 Rye Lane, London SE13 1JF, by 15th April 1983. Quota 1/2.

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